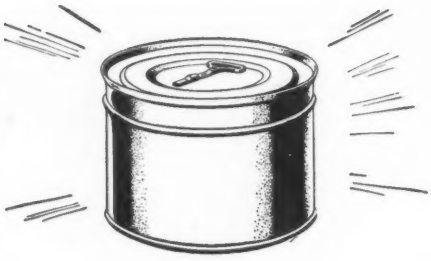
MODERN PACKAGING

SEPTEMBER 1944

BUSINESS & FINANCE

N-SYDNEY

A midnight phone call that made this into this



THE IDEA for packing coffee in the vacuum can originated in San Francisco about 1900. From this idea came the cone-shaped, 2-pound tin you see pictured above.

The purpose—then as now—was to bring the full flavor and aroma of freshly roasted and ground coffee to coffee drinkers.

To open the can, you cut off the smaller end. Then you slipped a cup-shaped cover, which came attached to each can, over the opened end.

While this method was progress in vacuum packaging, it had many limitations. It was expensive to make and very clumsy to ship, display, and use.

Research Bears Fruit

One midnight in 1920, the telephone awakened a member of the American Can Company. On the other end of the wire was the American Can man who had first pioneered the vacuum can. Twenty years of continuous research and experiment had finally borne fruit.

He had a practical solutior for opening a vacuum can and providing a cover for it at the same time. This is the coffee can with the key everyone is now familiar with.

It introduced millions to the original goodness, flavor, and aroma of coffee—*something few people had ever experienced in 1920!*

Come To Us

The present vacuum coffee can is one of the keystones on which the present tremendously increased sales of coffee rests. It resulted from the kind of pioneering and research that American Can has applied to hundreds of packaging problems for hundreds of companies. And it may well be that in working with you on a package for your product, we can produce equally gratifying results.

Jack

CANCO

AMERICAN CAN COMPANY

230 Park Avenue • New York 17, N. Y.

MODERN PACKAGING

VOLUME 18 SEPTEMBER 1944 NUMBER 1

IN THIS ISSUE

we present, in the article "S-Coating," the first complete technical report on a discovery which may prove to be the answer to the long-standing problem of mold inhibition in films, foils, papers and other packaging materials. The report is written by Dr. Alexander Goetz, who conducted the research at the Rare Metals Institute, California Institute of Technology. It starts on page 113.

All editorial contents bearing on military subjects have been released for publication by the Armed Services.

The Volume 17 Index of MODERN PACKAGING, September 1943 to September 1944, is off the press. To save paper, this has not been included with the September issue, but copies are available to any subscriber free on request to the editorial department.

General

Technical

Departments

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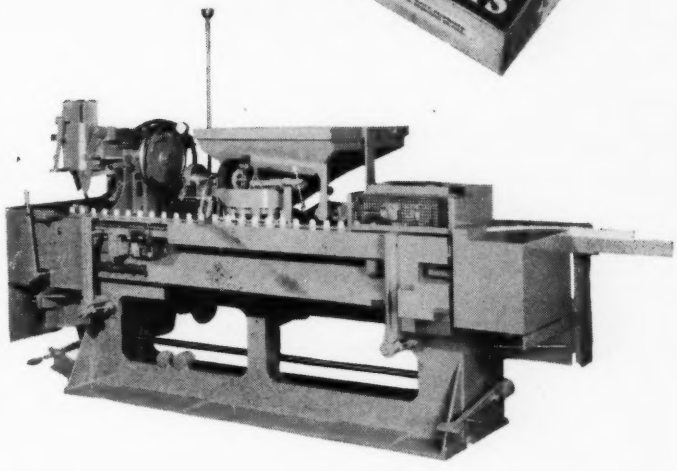
Printed in U. S. A. Acceptance under the Act of June 5, 1934, at Easton, Pa. Authorized October 7, 1936.

1c AND 5c CANDY ITEMS ... REDINGTON CARTONS THEM ALL ... UP TO 150 A MINUTE!

CARTONING costs must be kept down to *minute fractions* of a cent—especially on penny candy items. Yet candy tastes are fickle—candy costs unstable in the 1¢ and 5¢ candy field.

Cartoning machines must be built capable of handling *miscellaneous* types of candy and *some* of them must be made *readily adjustable* for several package sizes. And when candy tastes change, the same machine must carton a new favorite. With adjustable machines, as a product cost goes up *or* down, a switch is sometimes made to a larger or smaller carton, all at a speed of *100 to 150 cartons per minute.*

The *same* outstanding engineering skill and construction characteristic of regular type Redington Machines are incorporated in these cartoning machines for *free flowing* confections. Machines are speedy—smooth operating—efficient. So it is natural that the roll call of Redington Machine purchasers includes such



top names as Blumenthal, American Licorice, Brach, Bunte, Hawley & Hoops, Candy Crafters, M. J. Holloway, Pine Brothers, National Licorice and Quaker City Chocolate & Confectionery Co. They rely upon Redington's *47 years of packaging experience.*

We are still heavily engaged in producing tools of war but with high priority we are able to produce packaging equipment.

F. B. REDINGTON CO., (Est. 1897) 110-112 So. Sangamon St., Chicago 7, Ill.

REDINGTON

PACKAGING MACHINES

FOR CARTONING · WRAPPING · SPECIAL PACKAGING

They Know What They're Fighting For*

EXCERPTS FROM A LETTER BY WALTER SAVAGE, PETTY OFFICER 2ND CLASS, WHO HAS RECEIVED A PRESIDENTIAL CITATION FOR OUTSTANDING SERVICE IN ACTION.

"Our faces and names are many: olive-skinned and ruddy, we are blonde and we are red-headed. Cohen and Romano and young O'Brien from Boston are in the number one turret of a shiny new battle wagon. A Negro cook is a real man o'war's man, heroically dying as he saves his white mates from a terrible death in an alien sea. In Harlem they speak his name as one whispers a prayer, and his buddies in the South Pacific lie awake in the night and see his dead face and remember what they must do.

"We are from everywhere, the coastal plains and the piedmont and the great Rockies, with old ideas that we have lived by, the ideas of Lincoln and Jefferson and Tom Paine. These ideas are forever new and they grow in us. These great phrases become the simple reflections of real things: a house with green shutters, a porch swing that squeaks a song, fireworks on Independence Day, a book in an honored place in the public library -- a book in German which the Nazis have spat upon and burned.

"That is what the great words mean to us, citizens from everywhere: Burke and Warshawki and Simmons and Shapiro; it is solid and deep in us and it will never perish."

(signed) Walter Savage

BONDS FOR LETTERS!

TWO $25.00 WAR BONDS WILL BE AWARDED EVERY MONTH FOR EACH LETTER PUBLISHED.

Have you received a letter from a serviceman illustrating the spirit of cooperation and understanding which unifies America's fighting men of all faiths, races, backgrounds? If so, send it to Arrow Mfg. Co. You and the writer will *each* receive a $25.00 War Bond if letter is accepted for publication. All letters will be returned.

*ONE OF A SERIES OF ACTUAL LETTERS FROM MEN WITH THE ARMED FORCES, EXPRESSING THE DEMOCRATIC IDEAL — A POWERFUL WEAPON IN WAR, A PROMISE OF ENDURING PEACE FOR ALL MANKIND.

With Geon, it's the *combination* of properties that counts

THE tobacco pouch in the picture is made of GEON-coated fabric. It's shown because it represents a typical GEON formulation for a fabric or paper coating, having a certain predetermined *combination* of essential properties. First, it's moisture proof—keeps tobacco fresh. It resists chemicals—won't rot or deteriorate under continued contact with tobacco. It's long wearing—appearance will stay good. It's permanently flexible—won't crack in cold weather or get sticky in warm.

Those are just a few of the properties of GEON that may be obtained in an almost limitless variety of combinations. The list includes these additional ones: resistance to acids, alkalies, foods, fats, oils, greases, mildew, light, air. GEON materials may be flexible, waterproof, odorless, tasteless. GEON can be compounded to resist flame. It can be made in a wide range of colors. Film, sheet or coatings can be heat sealed.

Right now GEON is available to industrial users subject to allocation under General Preference Order M-10. However, limited quantities can be had for experiment—and our development staff and laboratory facilities are available to help you work out any special problems or applications. For more complete information write Department L-4, Chemical Division, The B. F. Goodrich Company, Rose Building, E. Ninth and Prospect, Cleveland 15, Ohio.

Geon
Vinyl Resins & Plastics

CHEMICAL DIVISION
THE B. F. GOODRICH COMPANY
ROSE BUILDING, E. NINTH & PROSPECT, CLEVELAND 15, OHIO

Functional Designs

CREATED FOR YOUR SPECIFIC BUSINESS IN THE PACKAGE OF TOMORROW!

Sefton's post-war packages will be as *functional* as they are attractive. Today, designers of the Sefton Fibre Can Company are planning packages with an utility value for each *specific* business and product so that *you* will have a *useful* package after the war. Look to Sefton's Package of Tomorrow to step up your sales.

SEFTON

FIBRE CAN COMPANY

ST. LOUIS ····· NEW ORLEANS

DISTRICT OFFICES: Los Angeles San Francisco Denver Tampa Chicago Des Moines New Orleans Boston Detroit Kansas City St. Paul Omaha New York Cincinnatti Cleveland Oklahoma City Pittsburgh Memphis Nashville Dallas Houston Salt Lake City Seattle

KELLER-DORIAN

CLAIMS RECOGNITION FOR MANY NOTABLE SERVICES IT RENDERS OUR WAR EFFORT.

AND

with the advent of Brighter Days

WE SERVE NOTICE THAT OUR PRODUCTS WILL FULFILL ALL PEACE NEEDS AND ESSENTIALITIES WITH THE SAME DEFINITENESS OF PURPOSE.

Keller-Dorian CORPORATION

516 WEST 34th STREET • NEW YORK 1, N. Y.

Here's proof that UNITAINERS can help your Post-War Product!

NO CRYSTAL gazing this. The plain, unvarnished facts show Sun Tube's individual, single-use container, the UNITAINER, can mean increased sales for many products, like your own, that now use a multi-use package.

And these pre-war accomplishments tell why:

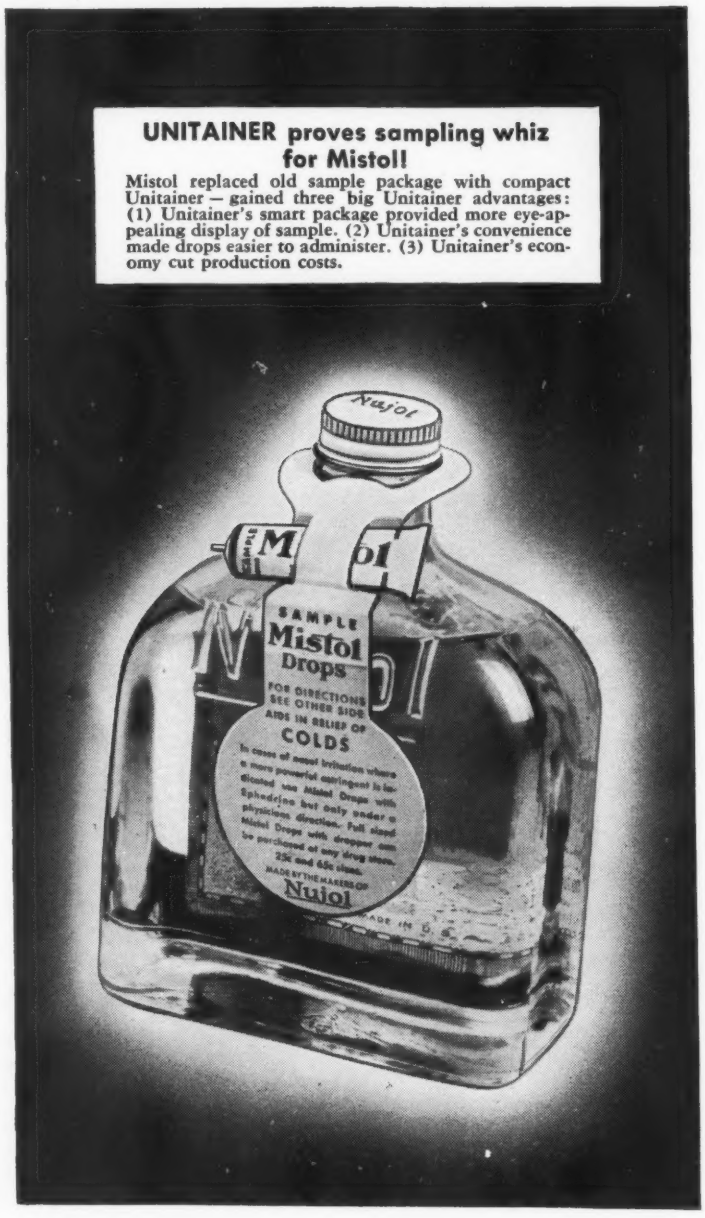
G. Washington needed an attractive package to protect the flavor of their coffee from moisture—chose Unitainers—found sales rising steadily.

Vitalis wanted to be sure customers got the genuine product—found UNITAINER the perfect answer.

Bromo-Seltzer found UNITAINER an easy-to-carry, handy package that opened a profitable, one-dose market.

So the list goes on! The Unitainer not only delivers your product to the consumer—it helps merchandise your product—increase its sales.

Find out about UNITAINERS today. For even though we're busy making UNITAINERS for war uses—we're ready to start planning your post-war package, now. Call or write our nearest office.



10 Reasons Why Unitainers Should Play a Part in your Post-War Plans!

1. Hold individual, measured amount.
2. Quickly opened with your fingernail.
3. Assure against substitution and counterfeiting.
4. Hermetically sealed and non-refillable.
5. Reduce loss due to leaks and breakage.
6. Protect against light and heat.
7. Smart and attractive in appearance.
8. Deliver your product in original container.
9. Handy to use and completely sanitary.
10. Offer excellent means for sampling.

SUN TUBE UNITAINER

PRODUCT OF SUN TUBE CORPORATION • HILLSIDE 5, N. J.

CHICAGO 1, ILL.
James L. Coffield, Jr.
360 No. Michigan Avenue

ST. LOUIS 1, MO.
M. P. Yates
706 Chestnut Street

ST. PAUL 1, MINN.
Alexander Seymour
903 Pioneer Building

LOS ANGELES 27, CALIF.
R. G. F. Byington
1260 North Western Ave.

It Keeps Celery C-R-I-S-P for 18 Days

—and there's a tip for you

IF your packaging problem is maintaining freshness, taste and color, listen to this celery story. Normally, celery becomes wilted, dry and bedraggled in a few days. But celery now can be kept tender, crisp and field-fresh for 18 days after harvesting—by packaging in **PLIOFILM**.

This is only one of many tests made by the University of Florida on hard-to-keep perishables—peaches, avocados, peppers, citrus fruits, mangos and numerous vegetables—tests that proved **PLIOFILM** prevents spoilage, protects flavor, adds weeks—often months—to their marketable period.

PLIOFILM keeps foods at peak-of-freshness because it is moisture-vapor-proof. It prevents evaporation of natural juices, protects quick-frozen foods from dehydration, and safeguards dry products from moisture-absorption. That's why, before the war, **PLIOFILM**-packaged cheese, meats, sausage, coffee, drugs, nuts, soup mixes and other air-moisture-sensitive goods were zooming in sales—*they kept fresh longer!*

Today all our **PLIOFILM** production is required for war uses. But it will be available again after victory.
For information, write: Pliofilm Sales Department, Goodyear, Akron 16, Ohio.

Pliofilm—T.M. The Goodyear Tire & Rubber Company

OFFICIAL REPORT ON CELERY
from Florida Agricultural Experiment Station
"Most outstanding was the preservation of the original coloration. Freshness was equal to freshly harvested celery even after 18 days at 37° F. and 6 days at 70° F. Taste was that of the field-fresh product and flavor was retained—*while unwrapped celery became stale after 6 days at the lower temperature.*"

Pliofilm
FOR BETTER POSTWAR PACKAGING

GOODYEAR
THE GREATEST NAME IN RUBBER

BUY WAR BONDS—BUY FOR KEEPS

A PRODUCT OF GOODYEAR RESEARCH

BEAR THIS IN MIND—With wartime restrictions and production schedules almost completely filled to take care of essential requirements, we are limited in producing **FITCHBURG FINISH** papers for ordinary civilian needs.

The majority of Fitchburg Paper production is made up of orders certified by our government as being essential to the war effort. These orders include such items as the following:

1. United States Army Quartermaster—Critical Laminated and Creped Ordnance Wrap—vitally essential to the overseas shipment of critical war materials.
2. United States Government Printing Office Paper.
3. United States Army Map Service—Wet Strength Map Paper which is most vital considering that 120 million maps were used in the invasion of France alone.

With the experience gained during the present crisis together with that of the past, we can readily say **FITCHBURG FINISH** papers will again take their rightful place in the post-war packaging and printing fields.

Our modern research facilities and skilled technicians are available to help you with your plans for future developments. Write today.

Fitchburg Paper Company

250 PARK AVENUE, NEW YORK CITY Mills: FITCHBURG, MASSACHUSETTS 11 SOUTH LASALLE STREET, CHICAGO

Ethocel Sheeting

RIGID TRANSPARENT PACKAGING . .

OTHER DOW PACKAGING MATERIALS INCLUDE

Saranfilm

KEEPS MOISTURE IN ITS PLACE

SARAN FILM is a transparent, flexible wrapping material of unusual toughness.

It possesses a truly remarkable ability to keep moisture in or out—three times more effectively than any comparable material. This outstanding quality will open the door to many packaging applications when conditions permit its general use.

Stripcoat

DIP IT • SHIP IT • STRIP IT

STRIPCOAT is a hot metal dip which protects metal parts with a tough, resilient skin that is quickly applied, sets immediately, and is removed easily by slitting and stripping.

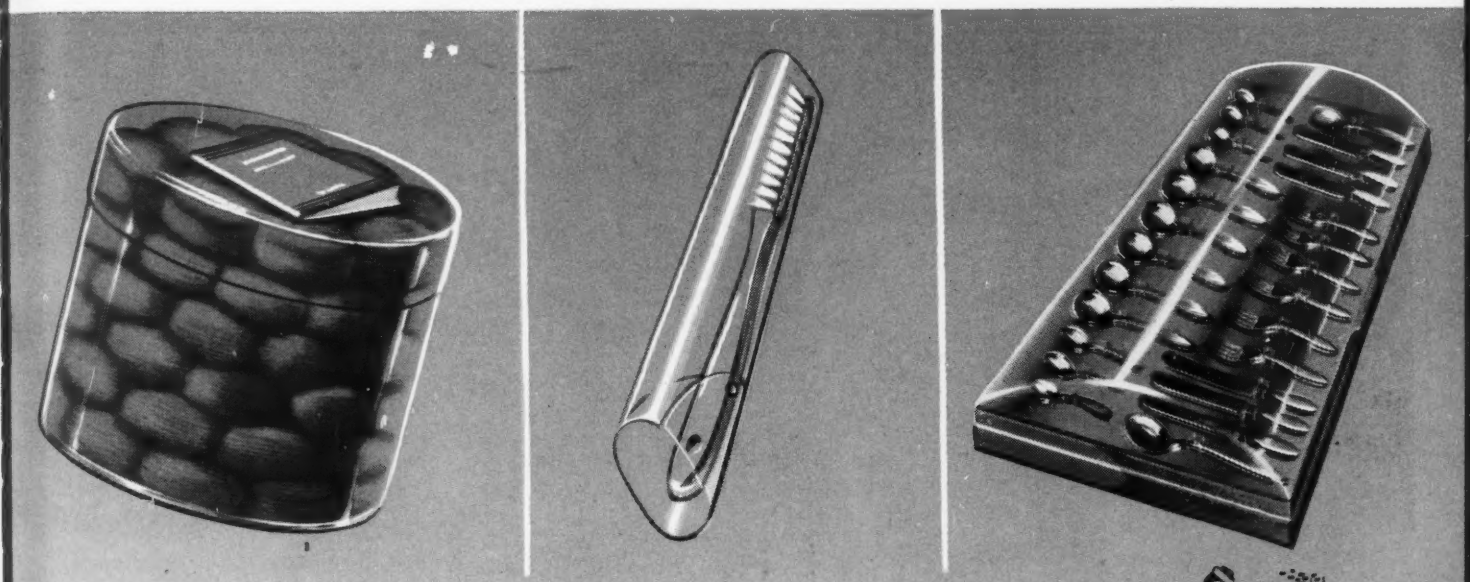
Stripcoat will be widely used to protect automobile parts and similar products during transit or while they are being stored on dealers' shelves.

It did it before—it will do it again

Before Hitler interfered, ETHOCEL SHEETING was a top-ranking material in the packaging field. Whenever merchandisers needed a rigid, transparent container combining product protection with smart sales appeal, package designers and fabricators quite naturally turned to Ethocel Sheeting.

They knew—from experience—that Ethocel Sheeting offered advantages not always possessed by similar materials.

Because of these qualities, you will want to keep an eye on Ethocel Sheeting when it returns from war. It has a definite place in postwar plans.



WITH SMART SALES APPEAL

The outstanding characteristic of Ethocel Sheeting is its toughness—its ability to remain serviceable and retain its sales appeal under rough handling, shelf-wear, and temperature extremes.

This durability is inherent in Ethocel Sheeting because it is cast from Dow Ethylcellulose—the toughest cellulose material commercially available. Ethocel Sheeting has great impact and tensile strength . . . remains stable at temperatures ranging from –70° to 250°F. . . . will not discolor or become brittle after long exposure to strong display lights or sunshine.

Because Ethocel Sheeting is extremely flexible, it can be bent, formed, and deep drawn into seamless ovals, circles, and oblongs. It can be beaded, crimped, scored, or folded. It can be finished in high gloss or rich matte—in almost any color.

Dow will, of course, be glad to supply any further details you need to enable you to include Ethocel Sheeting in your postwar planning.

THE DOW CHEMICAL COMPANY
MIDLAND, MICHIGAN

New York • Boston • Philadelphia • Washington • Cleveland • Detroit
Chicago • St. Louis • Houston • San Francisco • Los Angeles • Seattle

DOW

CHEMICALS PLASTICS MAGNESIUM

INDISPENSABLE TO INDUSTRY AND VICTORY

FOR PHARMACEUTICALS, DRUGS AND COSMETICS

This printing is STERILE PROOF . . . ACID-RESISTING . . . PERMANENT! Not even a knife blade can scratch it. *Printing can be applied in any color on bottles of any size.*

Our ceramic printing is the highly specialized and perfected development of 79 years as workers in glass. Facilities for fast, reliable, large-scale production include equipment of exclusive design.

WE ALSO PRINT ON PLASTICS

YOU HAVE ASSURANCE that your product information is always ON THE BOTTLE when you use Heidt Ceramic Printing.

This is modern *printing-on-glass*—the safe and *sure* way to identify your glass containers permanently. It benefits you and your customers 3 ways:

NO LOST LABELS!

A product loses its service after it has lost its identifying label. No one wants to have an anonymous bottle in the medicine cabinet.

NO SQUINTING!

A bottle with faded or obscured identification can be as bad to have around as the container that has lost its label. Ceramic printing is easy-to-read—it doesn't wear off or scratch off.

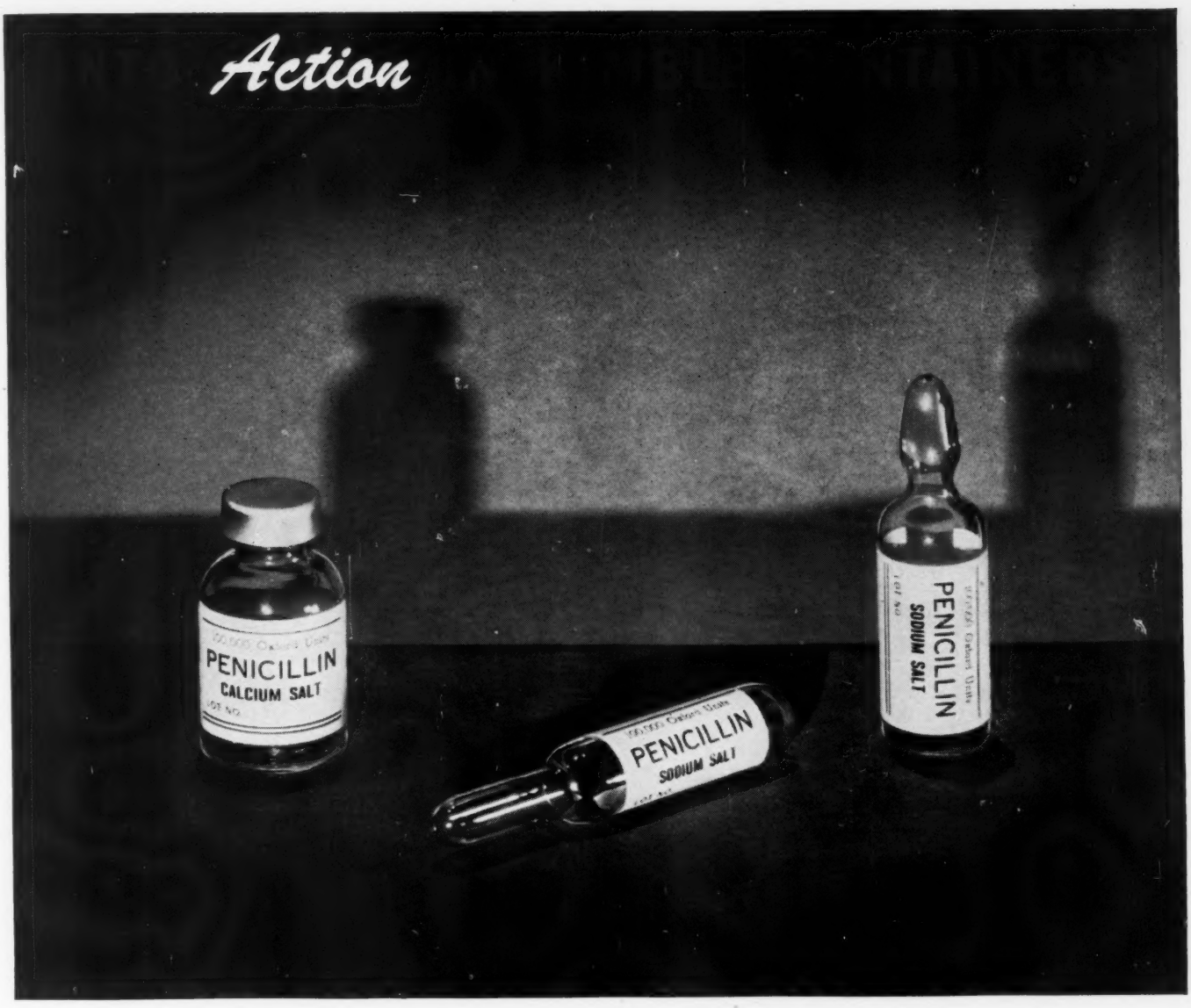
NO COUNTERFEITING!

Your containers are distinctly and unmistakably your own when you print on glass.

Ceramic printing is applied directly on vials, ampules, jars and serum bottles, supplied to us by the product manufacturer. Write for further information.

Heidt GLASS WORKS
INCORPORATED

1609-15 DeKalb Avenue, Brooklyn 27, N. Y.



Penicillin is but one of many invaluable drugs packaged for convenience and safety in containers of Kimble Neutraglas. . . . Critical drugs and pharmaceuticals, life-saving and pain-relieving materials, could never be effective without the glass containers that carry them to the point of action.

KIMBLE *Glass* CONTAINERS *For Assurance*

• • • *The Visible Guarantee of Invisible Quality* • • •

Can you use

Laminating Adhesives

with these characteristics?

Bond Strength:

Darex Laminating Adhesives give high bond strengths over a wide temperature range. Even at heat sealing temperatures they resist delamination.

Stability:

Darex Laminating Adhesives are stable at operating temperatures of 230° F. They are easy to use and can be kept continuously molten since they do not stratify or throw out constituents.

Heat Sealing:

Darex Laminating Adhesives do not flow or delaminate under heat sealing conditions.

Moisture-Vapor Transmission:

Darex Laminating Adhesives have been compounded to increase the protection against moisture-vapor transmission—a major consideration in laminated sheets.

Creasing:

Because of their formulation, Darex Laminating Adhesives give chamois-like characteristics to laminated sheets. This greater flexibility lends itself to folding carton manufacture and bag forming where scoring and creasing cannot be avoided.

Some Suggested Uses:

For doughnut cartons where hot packs are required. For sheet materials used in the protection of moisture-sensitive products. For heat-sealable stocks where protection against delamination is desired. For bags and cartons where better resistance to creasing, scoring, and bending is desired. For foil lamination where high bond strength, as well as the ability to cover up small pin holes, is required.

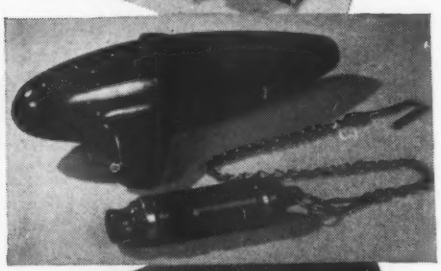
Darex Laminating Adhesives are designed to bond non-protective or semi-protective sheets to themselves or other bases to form protective packaging materials.

We do not claim that Darex Laminating Adhesives will solve all laminating problems, but our experience with them indicates that they offer to the industry a series of new materials whose properties package users have long sought. Our technical staff welcomes the opportunity to discuss these products with you.

Manufacturers of Darex Thermoplastic Coating Materials and Adhesives for protective packaging.

Dewey and Almy Chemical Co.
Cambridge, Massachusetts

DAREX LAMINATING ADHESIVES



WATERBURY PLASTICS
Moldings of Merit

When Louis Jacques Mande Daguerre of France perfected his photographic process in 1839, he little thought that it would lead to the development of a great American industry. Yet, out of the need to protect the sensitive Daguerreotype from fading, composition cases of remarkable beauty were created and that was the start of Plastic Molding in this country.

Waterbury Companies, Inc., then known as The Waterbury Button Company, in those pioneer days made buttons, mirror frames, checkers and dominoes of plastic material. Later on they molded quantities of phonograph records. Since those early days, newer plastics have been developed and their use has expanded into hundreds of industries, and countless applications now enter into our daily lives.

Today, Waterbury Companies, Inc., serves American Industry with a wide variety of plastic products, as well as with metal parts, lighting fixtures, buttons, toys and metal sundries.

Manufacturers working with this versatile company enjoy the advantages and economies that come from having their metal and plastic parts made in one plant under one responsibility; molded together when required, or assembled in complete units.

Look to this progressive company for your plastic and metal needs: Six complete manufacturing divisions, three laboratories, experienced engineers, designers and technicians are ready to serve you. When writing address Dept. J.

BUY MORE WAR BONDS . . . HASTEN VICTORY

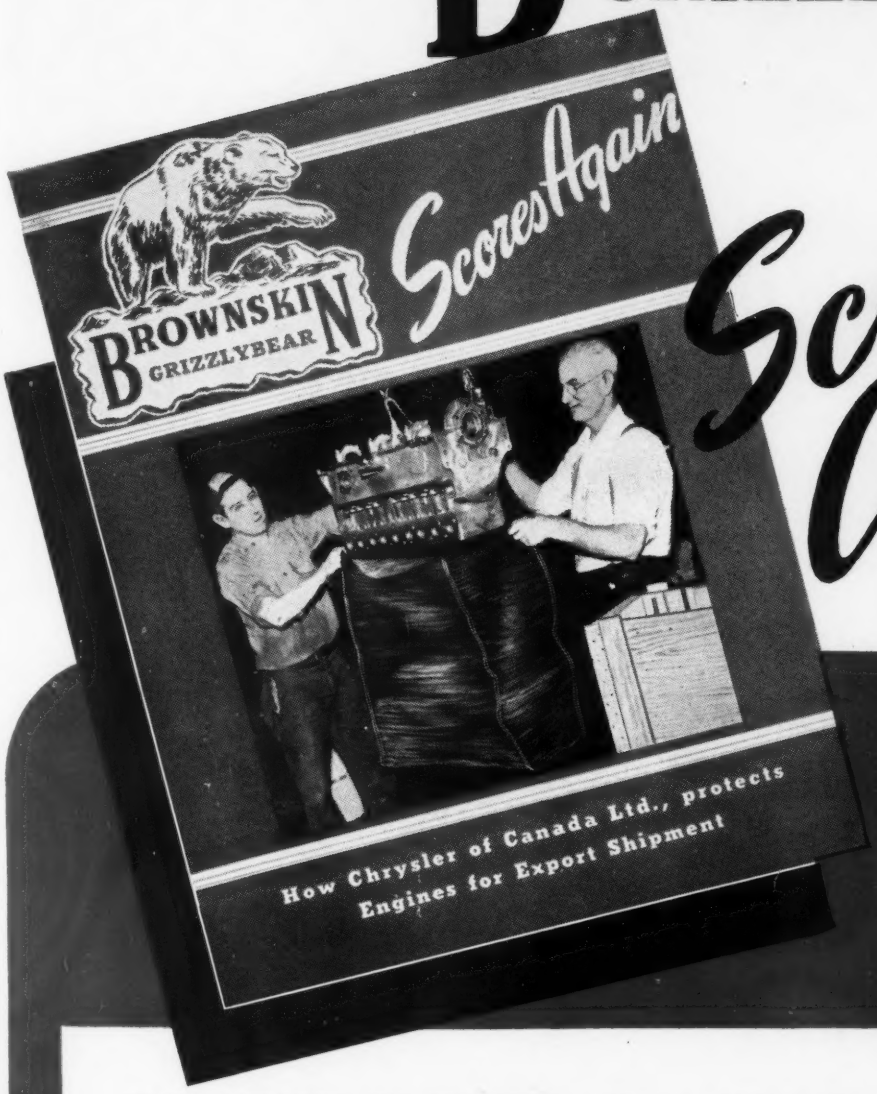
PLASTIC MOLDING
PLASTIC
LIGHTING FIXTURES
METAL SUNDRIES
EYELETS · TOYS
UNIFORM & DRESS
BUTTONS
Our Engineers and Designers will work with you

SOCIETY OF THE PLASTICS INDUSTRY SPI

WC INC 1812

WATERBURY COMPANIES, INC.
Formerly Waterbury Button Co., Est. 1812
WATERBURY, CONNECTICUT

BROWNSKIN GRIZZLYBEAR



Scores Again!

This colorful illustrated folder tells the experience of the Chrysler Corporation of Canada Ltd. Would you like a copy? It's free.

BATTLE AGAINST THE ELEMENTS — Chrysler Corporation of Canada Limited was faced with this problem of . . . "Corrosion and other deteriorating agencies, making it impossible to transport finished motor parts to the fighting fronts, ready for immediate installation and use."

ANGIER versus CORROSION — Angier Corporation engineers cooperated in the solution of the problem. After studying all the phases of it they recommended A-19 BROWNSKIN GRIZZLYBEAR.

RECOMMENDATION ACCEPTED — Angier scores again and again with its Corrosion Preventive and Waterproof Papers which have revolutionized the packaging of finished steel and precision parts delivered to the war theatres throughout the world.

WRITE FOR FREE FOLDER BMP

ANGIER CORPORATION
CORROSION PREVENTIVE AND WATERPROOF PAPERS
FRAMINGHAM, MASSACHUSETTS

Angier


Net balance, $9,396,484,748.
East Pepperell Plant to Get Army-Navy "E" Award
Bemis Bro. Bag Co. Presentation to Follow Parade and Elaborate Cere
Pepperell Plant Wins High Praise
Army-Navy to Take Part in Bemis "E" Ceremonies
PEPPERELL—The Bemis Bag Co. will receive the
Bemis Bag Co., Pepperell, Gets E Award on Thursday
Presentation ceremony for the Army-Navy "E" to the East Pepperell plant of Bemis Bro Ba
held at 2
perell, Mass. The public is cordially invited to attend
Collector of Internal Denis W. Delaney, who announced that approximately 25,000 corporations must fill in the returns and file them by July 31.
Gas Resistant Sacks Win 'E' For an East Pepperell Firm
War Activities of New England
East Pepperell Plant Honored With Army-Navy "E" Award
Bemis Bro. Bag Co., Wins Tribute From
Services for Production Achieveme
By Barbara A. Browne
PEPPERELL—Impressi
Bemis Bro. Firm to Get Army "E" for Fine Service
East Pepperell, Mass., June 23
Awarding of the coveted Army-N
"E" to the Bemis Bro. Bag
has just been announced
Secretary of War, R. S. Pat
son in Washington.
Brigadier General Al
assistant chief of the
fare Service for Field
will journey from Was
the principal speake
emony sched
Grateful... Proud... Humble...
EMPLOYEES of the Bemis Bro. Bag Co. at East Pepperell, Mass., whose war production work has earned the prized Army-Navy "E" are deeply grateful for the opportunity to help their country and the men fighting for it.
They are proud that their work has been considered worthy of this special recognition by our Army and Navy.
They are sincerely humble in the realization that their contribution is, even so, only "a drop in the bucket" compared to that of the fighting men whose efforts they are supporting.
And the Bemis Company is proud of these employees . . . and grateful and humble with them.
BEMIS BAGS
BEMIS BRO. BAG CO.
OFFICES Baltimore · Boston · Brooklyn · Buffalo · Charlotte Chicago · Denver · Detroit · East Pepperell · Houston · Indianapolis Kansas City · Los Angeles · Louisville · Memphis · Minneapolis Mobile · New Orleans · New York City · Norfolk · Oklahoma City Omaha · Peoria · St Helens, Ore · St Louis · Salina · Salt Lake City San Francisco · Seattle · Wichita · Wilmington, Calif.
BETTER BAGS SINCE 1858

There are many reasons why Anchor Hocking containers give the smooth performance, ease of handling and resistance to breakage that add up to "less downtime." Rigid manufacturing specifications...improved methods...careful specification of raw materials ...scientific engineering and design...uniform distribution of glass in the container...strict temperature control in the annealing operation...and, above all, the know-how of veteran glass workers. Anchor metal and plastic caps, too, stand the gaff on the production line. Among the five types (Amerseal, C.T., NKCT, Tricon and Plasticap), there's one or more ideally suited to your need for dependable, airtight, leakproof seals that protect your products from evaporation and deterioration until entirely consumed. And their ease of application will help keep your production on schedule with a minimum of costly downtime.

"Meet Corliss Archer" every Thursday evening, entire coast-to-coast network CBS

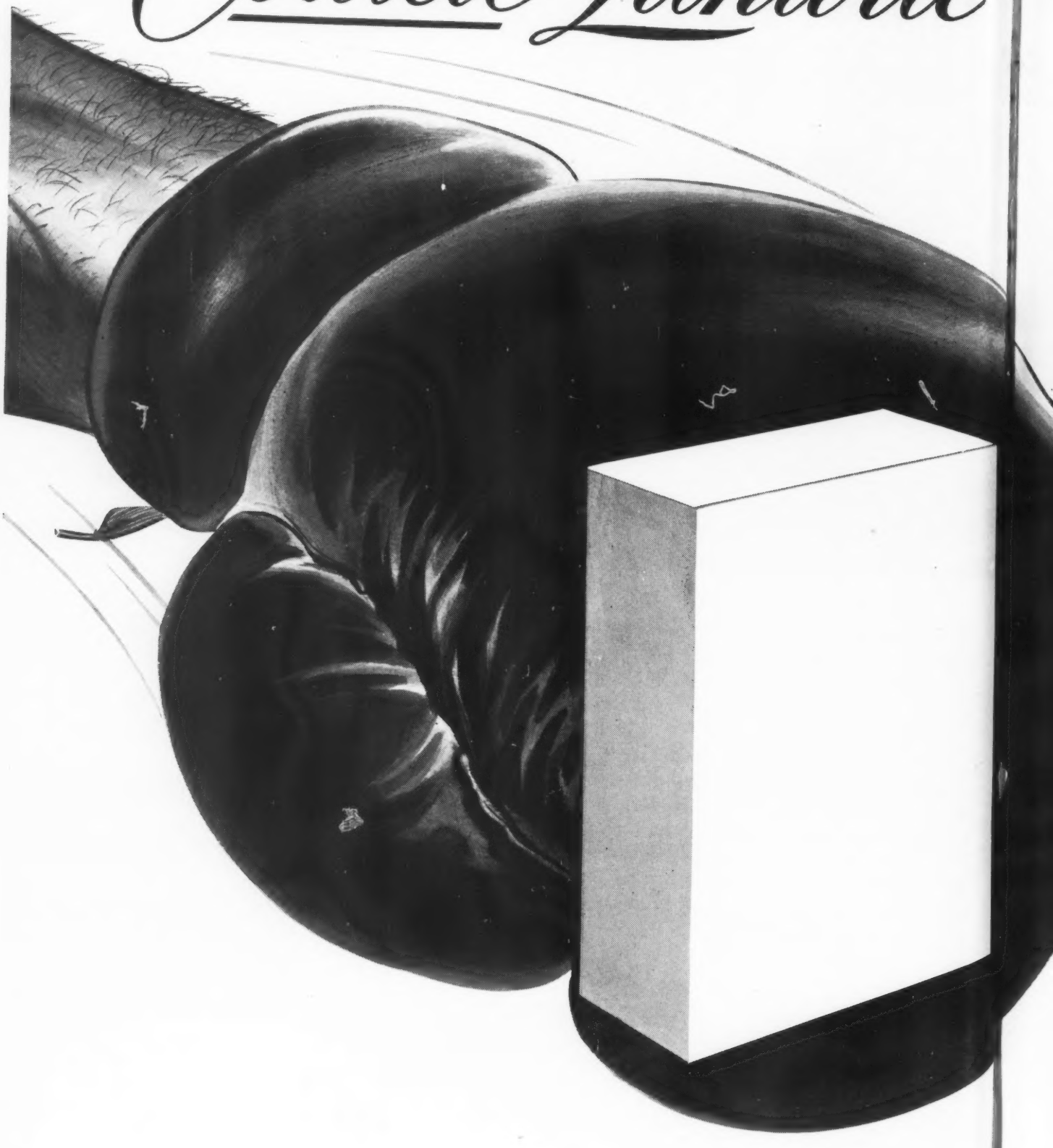
J. A. HODGE, one of Anchor Hocking's ablest and most popular men, has been a member of the Anchor Hocking family for 13 years.

ANCHOR HOCKING

GLASS & CAPS

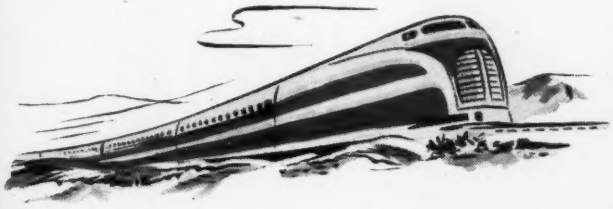
ANCHOR HOCKING GLASS CORPORATION | LANCASTER, OHIO

Coated Lithwite



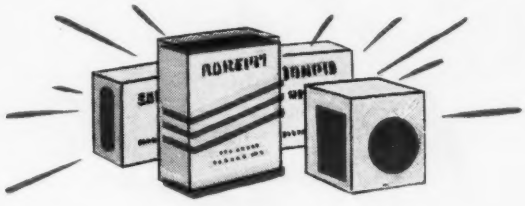
will put a punch into your postwar packages

When this brilliant paperboard is again available, you can package your products in folding cartons that carry greater sales wallop.



STREAMLINE OPERATION. *Coated* Lithwite is the original paperboard made and coated in one continuous, high-speed operation. Years of proved performance and constant improvement have led to widespread adoption of this revolutionary board.

UNUSUAL BRILLIANCE. *Coated* Lithwite's special mineral coating gives it an unusual whiteness and velvety feel. Colors hold up brilliantly, for there is little ink absorption. Fine engraving details come up sharply on this smooth, chalk-free surface.



SMOOTHER PRODUCTION. *Coated* Lithwite cartons click through high-speed filling machines with fewer jam-ups and leakers. For this unique board folds and scores accurately without shattering or flaking. Takes a tight, positive seal.

Due to wartime conditions, Gardner-Richardson cannot make additional commitments for *Coated* Lithwite. Not just yet. But the day is coming when this brilliant, time-proved paperboard will again be available to put extra punch into your packages, give your products an edge in the tough competitive battle that's coming after the war. Keep it in mind.

The GARDNER-RICHARDSON Co.

Manufacturers of Folding Cartons and Boxboard

MIDDLETOWN, OHIO

Sales Representatives in Principal Cities: PHILADELPHIA • CLEVELAND • CHICAGO • ST. LOUIS • NEW YORK • BOSTON • PITTSBURGH • DETROIT

PACKAGE ENGINEERING for POST-WAR SALES

No. 3 Custom-Built PACKAGES

Complete

POST-WAR PACKAGE PLANNING

This package is but one of hundreds of "best-sellers" that have been custom-built at Sutherland. If your postwar plans include products that haven't yet been packaged . . . or old products you want to dress up . . . ask our staff of expert designers and artists to recommend what's best in paperboard for you. Because Sutherland facilities for package manufacture are complete and cover hundreds of styles and many materials, you'll be sure of an unprejudiced decision! Preparation and approval of sketches *now* will put you weeks ahead when reconversion becomes reality. Send for further information.

SUTHERLAND PAPER CO. KALAMAZOO MICH.

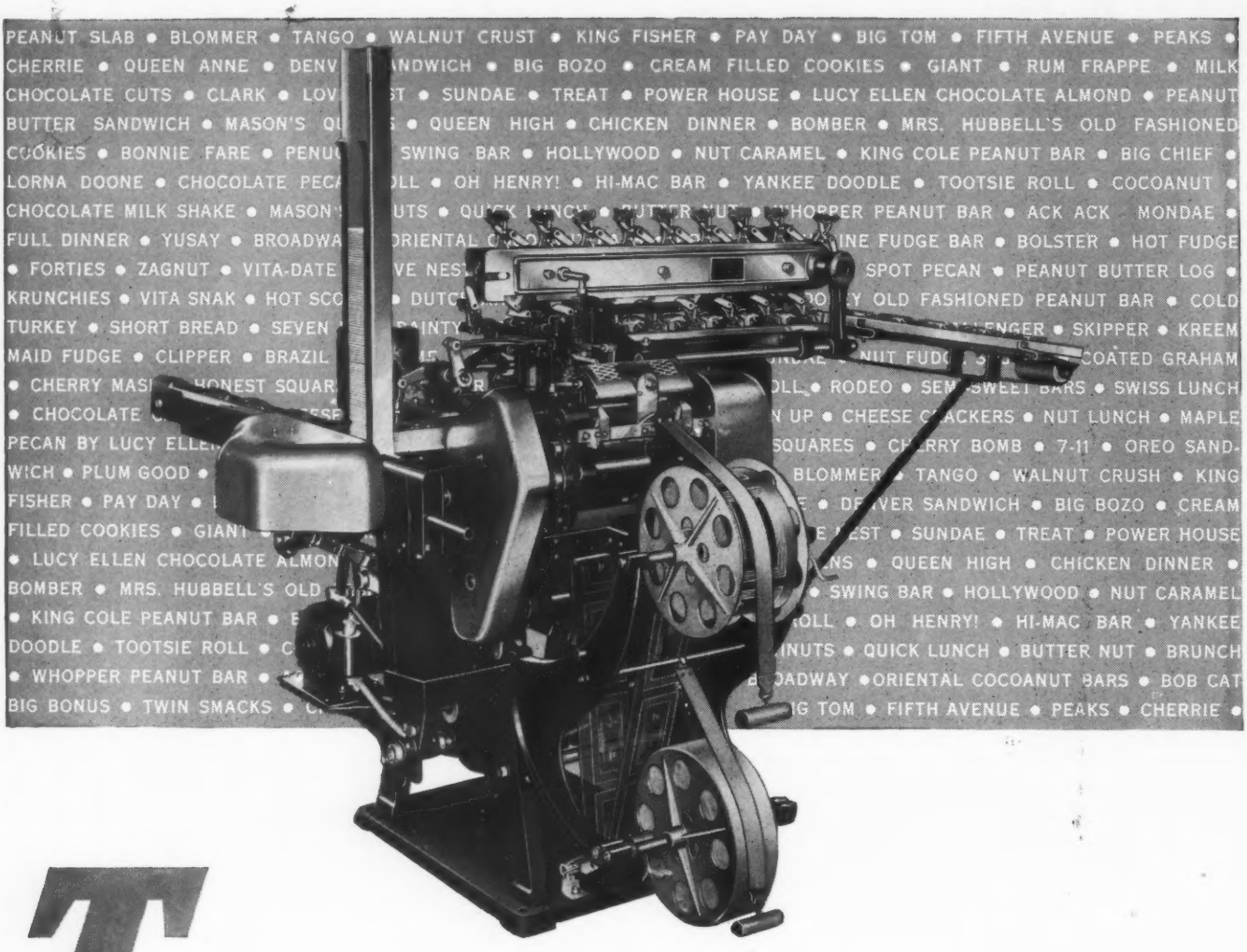
SUTHERLAND PAPER CO.

KALAMAZOO 13D, MICHIGAN

THE CELANESE PACKAGING MOTION PICTURE "PROVING GROUND" IS ON THE ROAD!

The first Celanese round-table meetings, of which the picture is a major part, have taken place. Both fabricators and users saw what has been going on with wartime packaging and how it will affect peacetime packaging through the picture itself; the market analysis; the discussions; and the actual packages.

Invitations will be issued when the meetings reach your city. However, don't wait for that. We would be very glad to hear from you now. We can send you pre-view information which might help in your planning and it will definitely help us in scheduling showings. Just write and say you are interested in learning more about the round-table meetings. Or, if you represent a large organization or association, 16 mm. prints with sound are available for private showings. Celanese Celluloid Corporation, a division of Celanese Corporation of America, 180 Madison Avenue, New York 16, N. Y.



TODAY WRAP-O-MATIC WRAPS OVER 150 LEADING CANDY BARS, BISCUITS AND COOKIES

Wrap-O-Matics are built in 2 basic models—Side-intake (illustrated) for feeding directly from enrober belt . . . straight-intake especially designed for 2 or 3 piece bars.

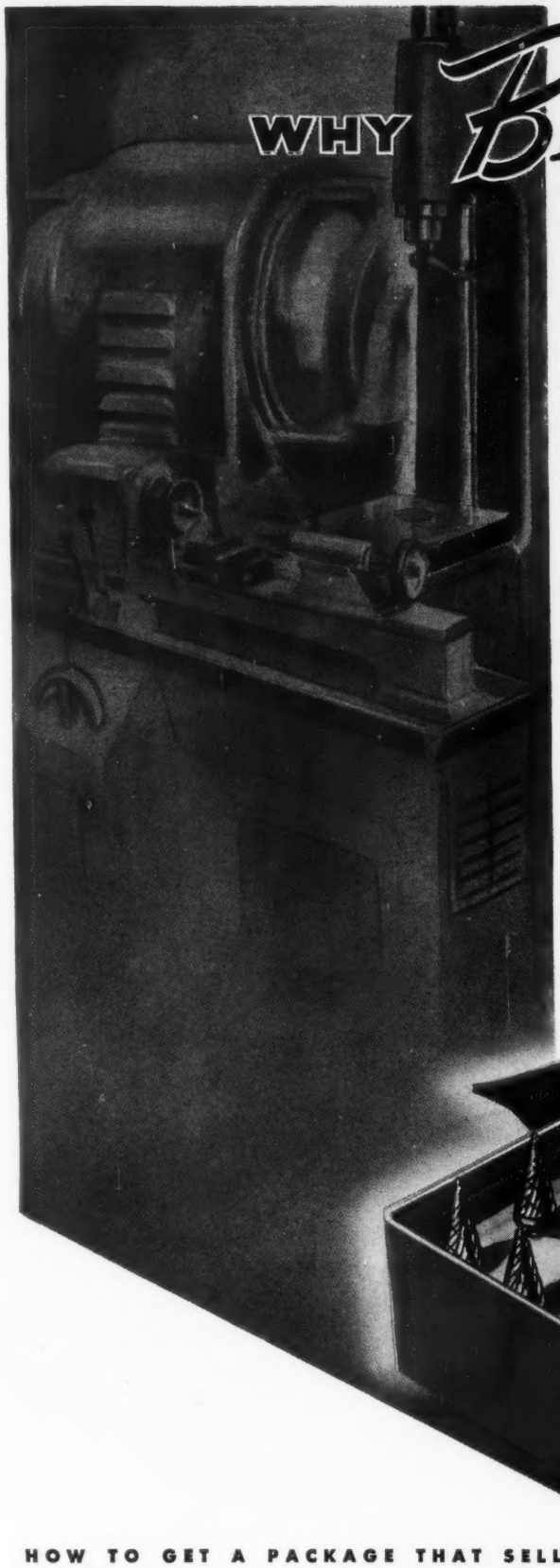
For HIGH SPEED PRODUCTION . . . SAVINGS IN WRAPPING MATERIAL . . . and SAVINGS IN LABOR are the reasons why leading confectionery manufacturers and bakers choose Wrap-O-Matic for wrapping candy bars, biscuits, cookies and many other small, soft or irregular shaped items.

Wrap-O-Matic operates at high speed, (up to 120 units per minute) wrapping soft and irregular shaped bars and biscuits, and uses glassine, cellophane, foil or any type wrapper that can be printed in rolls. Economizes on materials and labor . . . savings up to 35% in wrapper costs and up to 75% in labor . . . two vital factors in today's material and manpower shortage.

Let us survey YOUR wrapping problem. Write today for illustrated brochure and details of how Wrap-O-Matic will increase your production, sales and profits.

LYNCH
WRAP-O-MATIC DIVISION

Manufacturing Corporation, Defiance, Ohio
U.S.A.



WHY *Beauty* IN INDUSTRIAL PACKAGES?

MANUFACTURERS of *consumer* products for many years have recognized beauty—as a selling force. Auto manufacturers—for example—very wisely spent fortunes to give their models eye-appeal.

But beauty—*it was thought*—could NOT sell industrial products. Then—smart manufacturers began streamlining dynamos, lathes, punch presses, motors, compressors, gas engines, and . . .

—the industrial world changed!

For whenever better *or even equal* in efficiency, the new *better-looking* machines SOLD! And so well—that *modern equipped* factories resemble little the plants of ten years ago.

Beauty—it is clear—influences people's choice in EVERYTHING! That's why *industrial* merchandisers now insist on *attractive industrial packages.*

That's why in every package by Ritchie—whether it contains rotary files or a scented face powder—you will always find, in its lines, in its proportions, color or general design, a strong eye-pleasing quality . . . elements of beauty.

Attractive, practical, tamper-proof package created for M. A. Ford Manufacturing Co., Inc., Davenport, Iowa. Gummed flaps of cover turn under and seal to bottom. Unique nesting of tools prevents damage to cutting edges.

HOW TO GET A PACKAGE THAT SELLS

Let Ritchie design a package for you and it will have beauty *more than skin deep.* It will have the right material and structure for its job. It will be practical, convenient to use, easy to handle, easy to stack and display. It will proclaim your product-identity. It will be memorable and attractive. And Ritchie's expanded, war-developed facilities for volume production assure its low cost. Let Ritchie demonstrate how *you* can get a better selling package. No obligation. Write us today.

W. C. *Ritchie* AND COMPANY

8848 BALTIMORE AVENUE • CHICAGO 17

Set-Up Paper Boxes • Fibre Cans • Transparent Packages

NEW YORK • DETROIT • LOS ANGELES • ST. LOUIS • MINNEAPOLIS

PACKAGES BY RITCHIE PROVE THAT BEAUTY SELLS

WHAT MAKES MODERN PLASTICS GREAT?

First, service to the truth — second, service to the industry — this is MODERN PLASTICS simple formula for building the successful plastics publication.

Service to the truth means never publishing a line that has not been verified and checked. It means not glossing over lack of knowledge or accomplishment with facile words and bright pictures. It means sticking to the known facts and keeping away from rumors, even when responsibility can be dodged by labeling them as rumors.

In other words, no trick stuff, no dime-store comic-sheet superficiality, but a basic regard for the truth and for the responsibility of bringing reliable information to firms who need it.

MODERN PLASTICS subscribers are America's leaders who use plastics, from automotive to musical instruments. They are the plastic industry itself, more than 95% of whom pay $5.00 per year to read MODERN PLASTICS.

Devotion to the welfare of the plastics industry is the other study column supporting MODERN PLASTICS success. This includes countless activities: making motion pictures and distributing them, building exhibits and exhibiting them, running a special readers' service, maintaining the only library of plastics, performing countless public relation activities for the industry.

The net result can be measured in increased public understanding, acceptance and regard for plastic materials and a deep sense of appreciation by the plastics industry. Further, these services have established MODERN PLASTICS as the single reliable fountainhead of information on plastics, as well as publishers of the dominant periodical in the field.

MODERN PLASTICS MAGAZINE

MEMBER AUDIT BUREAU OF CIRCULATIONS

. . . the only ABC plastics paper
. . . the authority on the subject
. . . the established institution in its field
. . . one of America's great industrial publications!

PUBLISHED BY MODERN PLASTICS, INC.
122 EAST 42nd STREET, NEW YORK 17, N. Y.
Chicago • Washington • Cleveland • Los Angeles

WILL YOUR PACKAGE HAVE THAT *Postwar Look?*

If your product is one that won't be changed much, postwar, what are you going to do for Mr. and Mrs. Consumer, who will expect fantastic changes in everything from cradles to wheel chairs?

One thing you can do—make your package *look* new, *look* changed, *look* better value. Then you'll be in a better position to compete against the new products or improvements that are coming in every line.

Consider films and foils, alone or combined with paper or cardboard. They'll give you smartness, attractiveness, newness. You can have complete transparency or a peek-through panel that will display the product. You can obtain any desired degree of protection in flexible packages that your product requires.

Ask us for practical suggestions, without obligation. We'll work with you now, so that when man power and materials are available, you can have packages with that postwar look!

P. S. If you'll have a *new* product, you'll certainly need a new package. Ask us for ideas on this, too.

DOBECKMUN PACKAGING SPECIALTIES

Package design—the right combination of material, shape and design to provide protection, attractiveness and utility.

Cellophane bags—ounces to gallons; printed or plain; single or duplex; flats, squares or satchels.

"Tritect" cellophane—waxlaminated film for extra protection, in rolls, sheets or bags.

"Metalam"—heat-sealing aluminum foil permanently bonded to tough film, to give your product positive protection.

Printed films and foils—in sheets and rolls.

Laboratory testing—complete facilities for pretesting packages under all conditions of climate and service, to insure the right answer in advance.

Tritect and ***Metalam*** are trademarks of The Dobeckmun Company.

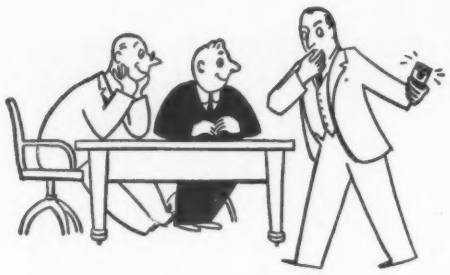
CONVERTERS — PRINTERS — LAMINATORS of FILMS and FOILS

THE DOBECKMUN COMPANY

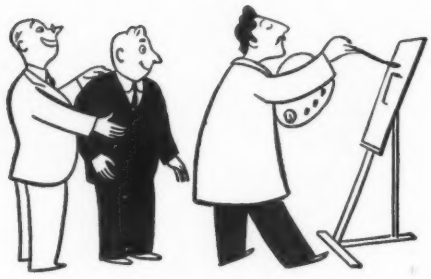
CLEVELAND 13, OHIO

WESTERN SALES HEADQUARTERS • SAN FRANCISCO 4, CALIF.

OFFICES IN NEW YORK, BOSTON, PHILADELPHIA, CHICAGO AND LOS ANGELES • REPRESENTATIVES EVERYWHERE



Will the package be as good as the design?



Will the colors be uniform?

An outstanding package can help to make sales and hold customers. The original design, however, often holds out a promise which is not fulfilled in the final printed and fabricated package.

Leading package, bag, container and label printers have long recognized International Printing Ink's technical skill and experience in the development of materials and methods for uniformity of color control, inks without odor, faster drying inks, non-bleeding wax-set inks and inks resistant to soap, moisture, mild alkalis, alcohol or food acids. This leadership is the direct result of our continuous program of color research and our use of precision control equipment—such as the General Electric Recording Spectrophotometer, Spectrograph, IC Viscometer, Tackmeter, Electron Microscope and other equipment, some of it our own development—for the exact measurement and analysis of color and materials.

IPI laboratory technicians and your IPI representative are equipped to help you, too, find the answers to your package printing problems. Keep in touch with IPI!

EACH YEAR, IN ALL NATIONAL PACKAGING CONTESTS, MORE WINNING PACKAGES ARE PRINTED WITH IPI INKS THAN WITH ALL OTHER INKS COMBINED!

ipi

Reg. U. S. Pat. Off.

***Hot Melt** Coatings and Laminants too! IPI, as the leader in its field, is in constant touch with packaging problems and requirements. Ask your IPI representative about moisture-resistant, grease-proof, non-aqueous hot melt coatings and laminants!*

INTERNATIONAL PRINTING INK

DIVISION OF INTERCHEMICAL CORPORATION, EMPIRE STATE BUILDING, NEW YORK

ARE YOU READY FOR C DAY?

D Day for Fortress Europe is history . . . and what history! ☆ C Day for you and your business is still ahead . . . but closer perhaps than you think and more surprising in its results. For C Day will be Consumer day, and the battle as always will be won by the Consumer. ☆ Are you ready? Will your packages have the display value, selling punch and buy appeal which the competition ahead will demand? Make sure by planning now. Milprint is at your service.

MILPRINT Inc.

PACKAGING CONVERTERS · PRINTERS · LITHOGRAPHERS

PLANTS AT MILWAUKEE, PHILADELPHIA, LOS ANGELES

Printed Cellophane, Pliofilm, Glassine, Aluminum Foil, Coated and Laminated Papers, in all forms including Sheet Wraps, Rolls, Pouches, or Specialty Bags. ☆ Revelation Bread Wraps, Specialty Folding and Window Cartons, Counter Displays, Simplex Pie and Cake Units.

SALES OFFICES IN: NEW YORK • CHICAGO • SAN FRANCISCO • PHILADELPHIA • LOS ANGELES • GRAND RAPIDS
ATLANTA • ST. LOUIS • MINNEAPOLIS • BOSTON • CLEVELAND • CINCINNATI • PITTSBURGH • DALLAS • INDIANAPOLIS

THE LATEST

in automatic powder filling

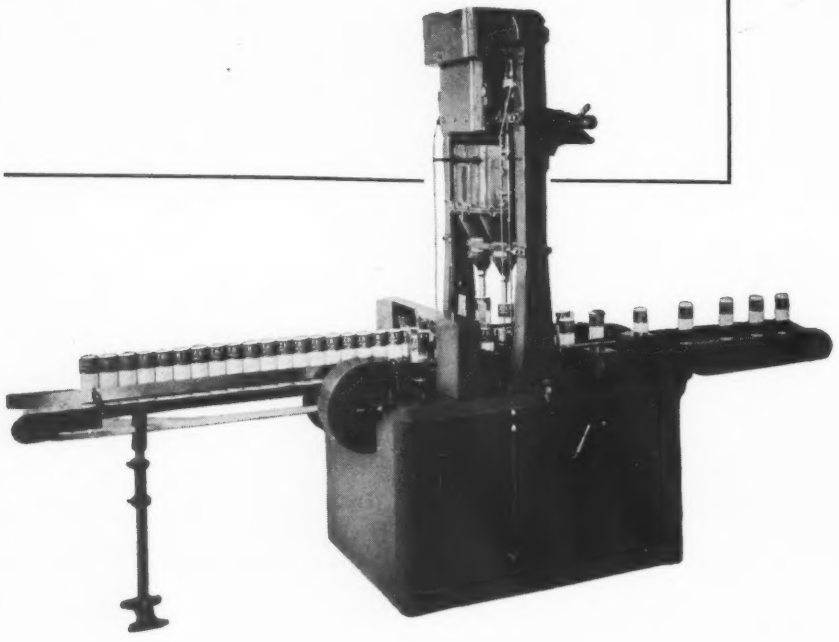
Model JK

AUTOMATIC GROSS WEIGHT

PACKING MACHINE

A completely automatic twin station filler that will pack by volume, fill by volume, or weigh. The automatic packing feature is meeting with enthusiastic approval since, in numerous cases, the decrease in the size of containers under the Food and Drug Law makes packing necessary.

The machine will handle all types of powdered and granular materials. It incorporates many improvements, some of which are as follows:



1. Hand control for quick adjusting of weight variation resulting from a change in the density of the product. By the simple turn of a knob this variation can be corrected while the machine is running.

2. Automatic—No Container, No Fill.

3. An adjustable baffle plate in the hopper which can be adjusted from the outside to any desired angle, according to the product and the weight being filled, so as to provide the proper flow of material to the auger.

4. A heavy duty gate valve above the auger stations which can be closed when changing augers, thus shutting off the material in the supply hopper and eliminating the necessity of emptying the material from the hopper.

5. The machine can be equipped for intermittent conveyor motion, when desirable, to prevent climbing and piling up of oval or irregularly shaped containers.

6. Provision in the gear box for change gears so as to obtain the most efficient auger speed for each different product.

7. All mechanisms below the feeding table completely enclosed, thus preventing any chance spillage of powder from penetrating the working mechanism of the machine.

The Model JK is the latest thing in filling. So, whether you need a machine for current production or want to place an order for postwar delivery, you can be sure that you will be getting in the Model JK a machine providing the ultimate in efficient filling.

UNITED STATES AUTOMATIC BOX MACHINERY CO., INC.

(Makers of complete line of packaging equipment for weighing, filling, cartoning, closing, box-making and wrapping)

(Divisions—National Packaging Machinery Co.—Cartoning Machinery Corp.)

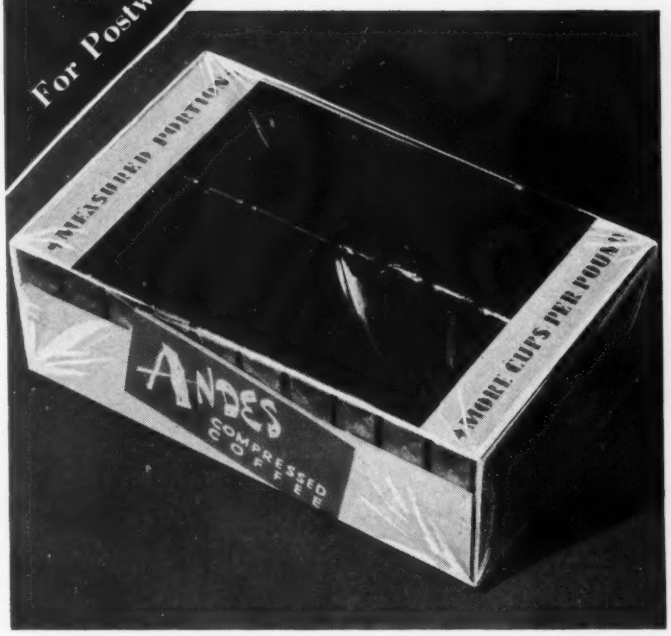
22 Arboretum Rd., Roslindale, Boston 31, Mass.

Branch Offices: New York, Cleveland, Chicago Los Angeles: Krugh Equipment & Supply Co.

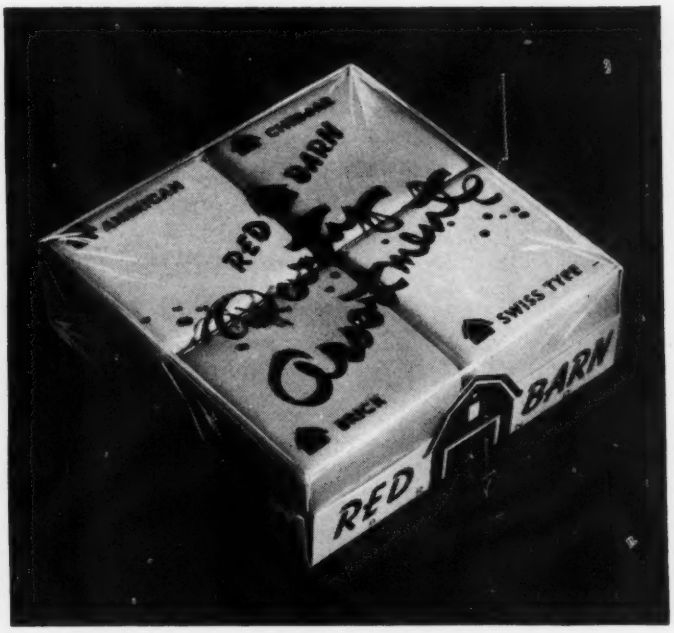
Idea Corner

For Postwar Package Planners

COFFEE THAT'S CONVENIENT...
CHEESE THAT'S DIFFERENT...
SCREW-EYES READY TO GO...



IDEA NO. 1 A familiar product in a new form can perk up sales—especially when it offers greater convenience and economy. Measured portions of compressed coffee—the last as good as the first.



IDEA NO. 2 Can you use this sampling idea? The more of your products a customer knows and likes, the rosier the prospects for your complete line. Gives the shopper a convenient variety assortment.

IDEA NO. 3 Many of your products eat up selling time because small units need to be counted out or weighed. Here's a forward-seeing merchandising idea—each unit says, "I'm all ready to go; please take me home!"

Basic Themes of Postwar Merchandising

Here are six fundamentals that will help to lower postwar distribution costs and speed up turnover. Use them to check *your* postwar package plans.

1. SELF-SERVICE: Emphasis on self-selection and display value.

2. CONVENIENCE: Size, shape, quantity, ease of use are predominant factors.

3. INFORMATIVE LABELING: Need for concise information, terse selling message.

4. IMPULSE BUYING: A high percentage of all buying done on impulse.

5. PROTECTION: Adequate protection geared to rapid turnover.

6. VISIBILITY: 85% of all buying done through the eyes. Visibility of primary importance in the package of the future.

Would you like to see more postwar packaging ideas? Just write: E. I. du Pont de Nemours & Co. (Inc.), Cellophane Division, Wilmington, Del.

Du Pont Cellophane

DU PONT
REG. U.S. PAT. OFF.

Better Things for Better Living . . . *Through Chemistry*

VISIBILITY . . . a powerful force in modern merchandising

In warfare the toughest jobs go to the Infantry. They're built and trained to take it. And in the field of packaging wherever a really tough collapsible tube is required, it's a job for SHEFFALLOY *Sheffield Process* Tubes! They too, are built for the hardest kind of service.

The extra toughness of these well known tubes is the result of our exclusive Sheffield Process of mixing, melting, and tempering the metals. And their remarkable success in packaging many products unfriendly to collapsible tube metals is the result of VINICOTE Inner Coatings . . . a series of more than 50 linings, developed by our research staff. If "SHEFFALLOY" and "VINICOTE" are unfamiliar trade names to you, better write for complete information now.

Sheffalloy TRADE MARK REGISTERED
SHEFFIELD PROCESS TUBES

NEW ENGLAND COLLAPSIBLE TUBE CO.

3132 S. CANAL STREET, CHICAGO 16 • NEW LONDON, CONN. • W. K. SHEFFIELD, 500 FIFTH AVENUE, NEW YORK 18
THE WILCO COMPANY, 6800 McKINLEY AVE., LOS ANGELES 1

PERFECTION

BOX COVERING PAPERS

ARE ATTUNED TO THE TIMES—WHILE SOME MATERIALS ARE RESTRICTED AND OTHERS ARE SCARCE, WE ARE STILL GETTING MANY BEAUTIFUL EFFECTS FOR SEASONAL AND YEAR 'ROUND USAGE.

☼

WE WILL GLADLY FURNISH SAMPLES AND SUGGESTIONS FOR SMART AND ATTRACTIVE WAR-TIME PACKAGING.

This Sample — Pattern C. W. 794-F — White Chrome Base
Available in Many Different Color Combinations.

ROYAL PAPER CORPORATION

Manufacturers of Decorative Papers

210 Eleventh Avenue • New York 1, N. Y.

DO ALL YOU CAN TO WIN THE WAR IN '44

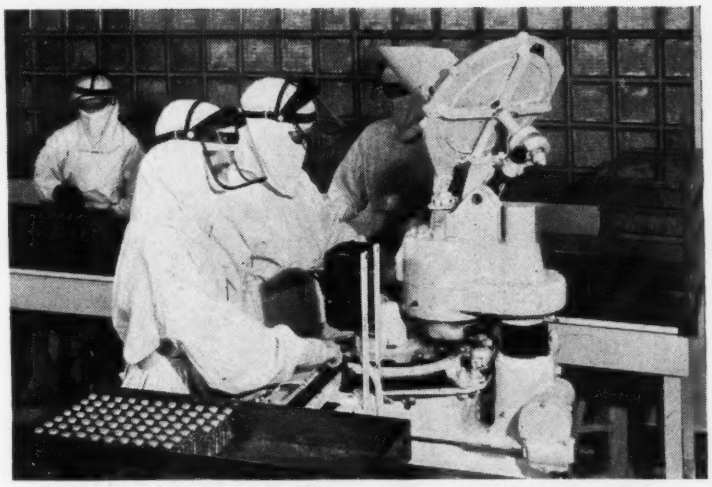
Precious Penicillin is *Alseco Sealed*

Developed before the war. Carried forward by the war. Destined for great things after the war. That's the story of penicillin.

In a modest way, the story of the seals that seal penicillin is directly parallel. This type of Alseco Seal was developed for intravenous solutions before the war. Next it was adapted for serums. Then came blood plasma. And now millions are being made for sealing penicillin.

It is a versatile seal, one that will find many uses when it can be offered freely to glass container users. It is tamperproof, completely eliminates leaking and breathing and will withstand autoclaving.

Perhaps you would like samples to study its possibilities. Write us if you would.



Penicillin vials are sealed under carefully controlled sterile conditions by masked, gowned, gloved operators. Alseco Machine that applies the caps under top pressure and locks them to the vials is at the right.

Left to right: *Finished package with aluminum dust cap over seal. Aluminum seal which is locked in place by being rolled under flange on vial. Tear-off tab removed to permit inserting hypodermic needle through rubber stopper.*

SIGNAL FLARES

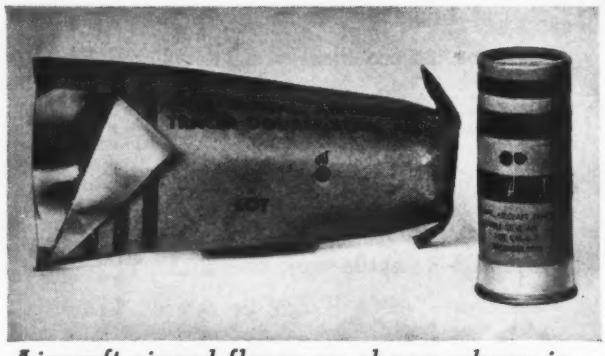
Only one of many thousands of items being shipped to our Armed Forces that are being protected from moisture and extremes of temperature by

REYNOLDS HEAT SEALING ENVELOPES

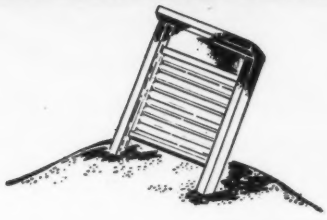
REYNOLDS foil laminated packaging gives required protection against moisture and varied atmospheric conditions. Reynolds Heat Sealing Envelopes are distributed and stocked in seven graduated sizes by Criterion Paper & Twine Company in the Metropolitan New York area.

* * *

Manufacturers of superior paper products and packaging materials seeking a progressive, aggressive distributor in the New York Metropolitan area are invited to investigate the many reasons why Criterion enjoys an unusually high reputation among manufacturers whose products they distribute and among buyers with whom they are in daily contact.



Aircraft signal flares as shown above in the photographs are used in many ways by the Armed Forces on land, sea and air.



SO THEY PERFECTED A "SAND LAUNDRY"

The persistent search for better glass leads research far afield

FINDING a needle in a haystack is child's play compared with finding and eliminating a few tiny foreign particles in a ton of sand. The research men at Armstrong's Millville glass factory faced this problem some years ago. Their reason for undertaking this project was that New Jersey sand, outstanding in most respects for glassmaking, contains a few impure particles in every ton which can discolor the glass. By removing these unwanted particles from each of the thousands of tons of sand used annually, they improve the quality of Armstrong's Glass.

Armstrong's research men and engineers first determined the relative size, weight, and number of the impure particles. Then they sought a way to remove them from the sand, economically and on a production basis. Nearly four years were spent in redesigning equipment that was doing a partial job. Finally the long, table-like apparatus, which has narrow strips running diagonally across it and which can be mechanically gyrated, was perfected.

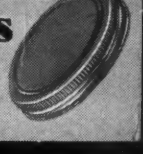
When sand and water were fed in at the top corner, the strips and the gyrating action forced the impurities off the far end. The sand, separated from impurities, cascaded off the lower side. Thus the "sand laundry" finally became a fact!

This sand laundry, which made better glass possible, is only one of the many contributions made by Armstrong's glass chemists, engineers, and physicists to the science of glassmaking. Their patient, persistent work has been a major factor in making—and keeping—Armstrong's Glass top quality.

For further interesting information about the skilled men and women who make fine glass, write for your free copy of Armstrong's illustrated booklet, "Men and Glass." Address Armstrong Cork Co., Glass and Closure Division, 5909 Prince Street, Lancaster, Pa.

ARMSTRONG'S GLASS

and **ARMSTRONG'S CLOSURES**



American business men inspired this important "Made in the United States of America" change from the original O.W.I. emblem for export shipments. Now, hundreds of manufacturers and exporters tie their products to a U. S. Government campaign that is building good will for American made products among American and foreign consumers. It will pay you to adopt this NEW emblem and tell the world IT'S AMERICAN!

Available in any language and in sizes to suit your particular needs (from product to shipping container) to include your trade mark.

A Decal is the "Come in and BUY-Word" that flashes your sales message without a rest. Whether the need is for a perfume bottle label, point of sale advertising, or a sign for the side of a 20-ton truck, our creative staff is at your service, promptly. ***INVESTIGATE NOW!***

ALLIS-CHALMERS
AUTHORIZED DEALER
SERVICE
SALES
PARTS

WALKER
HEADQUARTERS

KEEP IT BURNING and all's well!
GALLAGHER & BURTON'S

Nunnally's
THE CANDY OF THE SOUTH

DUTCH MASTERS
They're mild!

PF&CO
SINCE 1850

PALM, FECHTELER & CO.

Creators of Quality Decalcomania

21 EAST VAN BUREN STREET, Chicago 5, Illinois • 220 WEST 42nd STREET, New York 18, N. Y.

The Gaylord "Extra Margin of Safety" Was Never More Vital

CORRUGATED AND SOLID FIBRE CONTAINERS

•

FOLDING AND PARAFFINED CARTONS

•

KRAFT PAPER BAGS AND SACKS

•

KRAFT WRAPPING PAPER AND SPECIALTIES

When boxes of military supplies are tossed overboard to float ashore with the tides, boxes *must* be of the sturdiest construction to carry their vital contents through safely. As the War Effort calls on Gaylord for more and more boxes to deliver supplies to the fighting fronts, Gaylord's customers, too, are sharing in this effort by accepting curtailments for civilian uses.

BUY MORE WAR BONDS

GAYLORD CONTAINER CORPORATION, General Offices: SAINT LOUIS

New York • Chicago • San Francisco • Atlanta • New Orleans • Seattle • Tampa • Detroit • Portland
Los Angeles • Indianapolis • Houston • Minneapolis • Dallas • Jersey City • Appleton • Oakland
Memphis • Fort Worth • Cincinnati • Oklahoma City • Greenville • Columbus • Jacksonville
Des Moines • Kansas City • Milwaukee • Bogalusa • Weslaco • St. Louis • Hamden • San Antonio

ANOTHER WARTIME USE FOR CEL-O-SEAL BANDS

TRADE MARK

DU PONT CEL-O-SEAL cellulose bands are today serving Uncle Sam in many ways. Protection for the contents of Davis Emergency Equipment Company's First Aid kits is a good example.

These kits contain almost everything needed by those in uniform, should emergency arise. Life itself may be at stake, so it is vitally important that these antidotes retain full strength and effectiveness.

CEL-O-SEAL bands protect these products that protect lives. The bands tightly seal bottle and vial closures. They guard the product against dirt, evaporation, leakage, tampering and acts of sabotage such as substitution or dilution.

And in days to come, after Victory is won, Du Pont CEL-O-SEAL bands will again be available to guard not only pharmaceuticals and medicines, but foods, beverages, candies, cosmetics and scores of other products. Bands are supplied in a wide variety of colors and when impregnated with monogram or trade mark, they become attractive second labels adding distinction and sales appeal to the package.

CEL-O-SEAL bands can now be furnished for many civilian uses. If you have a bottle, jar or package closure problem, write for complete information today. Detailed leaflet upon request.

CEL-O-SEAL bands are sold by:

E. I. du Pont de Nemours & Co. (Inc.), "Cel-O-Seal" Section, Empire State Bldg., New York City 1, N. Y.

Armstrong Cork Company, Glass & Closure Div., Lancaster, Pa. • I. F. Schnier Company, 683 Bryant Street, San Francisco 7, Calif.

DU PONT

REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING...*THROUGH CHEMISTRY*

FIRST AID AT HOME . . . GUARDING THE NATION'S WARTIME HEALTH—U. S. CADET NURSE CORPS

GLASS — WITH CARE

There is nothing unusual about this line on a shipping case filled with glass containers. But when that case comes from Carr-Lowrey, it takes on a special significance.

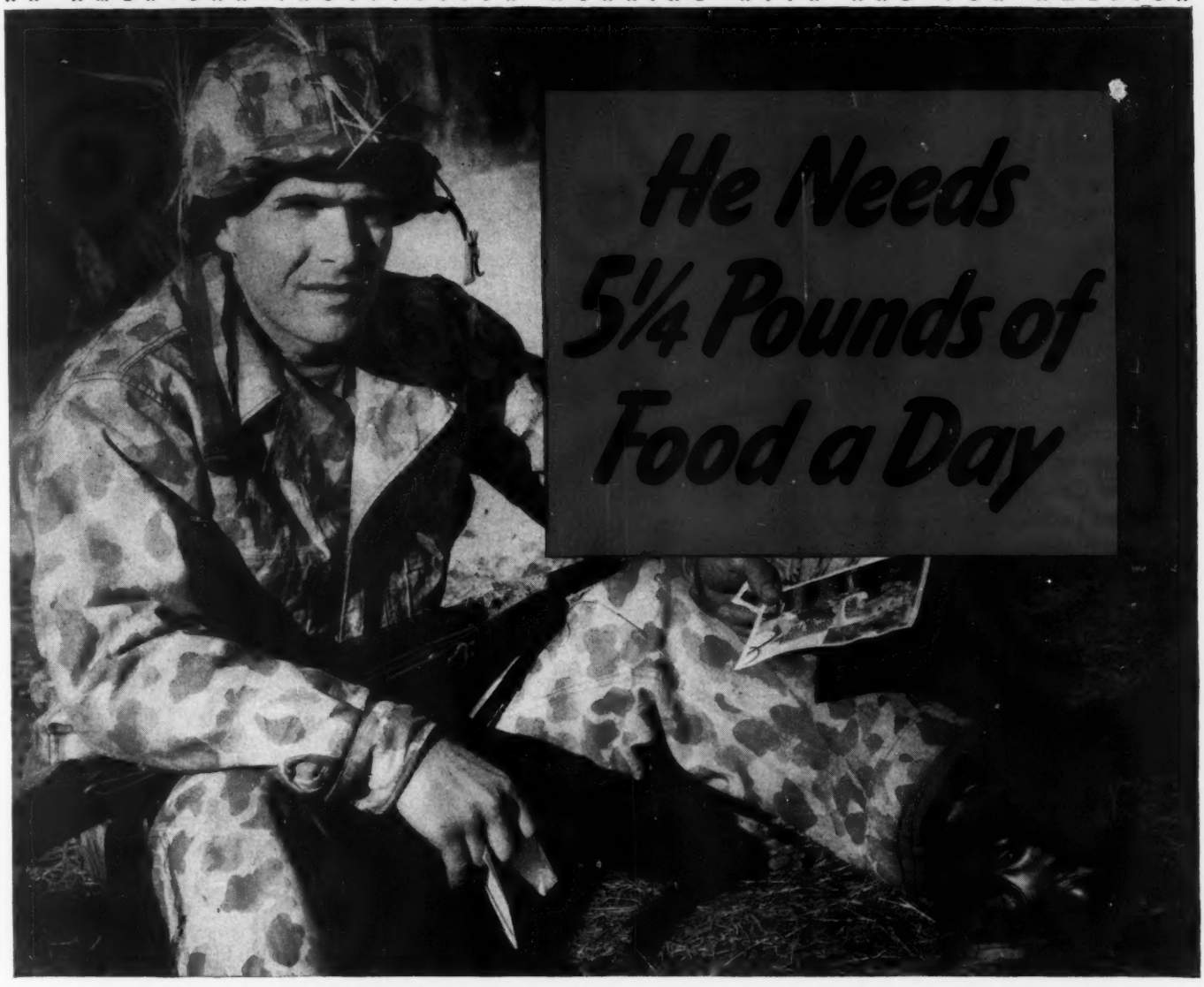
In this fifty-five year old organization "handle with care" has long been a rule and a habit. It starts with the mixing of raw materials. It is carried through every operation. Step by step to the finished glass container, every detail is handled with painstaking care by workmen jealous of their reputation for making top quality glass.

Perhaps that is why Carr-Lowrey has long been the choice of so many of the foremost manufacturers of drug, cosmetic, household and food products. If you, too, are especially particular about quality, we invite your consideration.

CARR-LOWREY GLASS CO.

Factory and Main Office: BALTIMORE, MD. • *New York Office:* 500 Fifth Avenue • *Chicago Office:* 1502 Merchandise Mart

AN AMERICAN INSTITUTION WORKING WITH AND FOR AMERICA



FOOD makes tough American fighting men and makes healthy, efficient workers in America's great war plants.

Our farms and ranches are producing more food than ever before—yet the demands are greater than ever before not only from our soldiers, *who need 1½ times as much as they needed at home,* but also from millions of Americans on the home front.

After food production, the next essential is to *conserve* it; this means fighting Waste in every form. For example, Spoilage and Shrinkage in handling, transport and storage of many foods continues to be minimized by highest quality protective packaging papers such as are made at Rhinelander mills. Over many years prior to Pearl Harbor, our products had faithfully served the Nation's processors in the protection of edibles. In the after-war world, they will do likewise. Our accumulated war and peacetime experience of nearly fifty years assures product perfection considered remote in the prewar era. Depend on Rhinelander—we are ready.

RHINELANDER
PROTECTIVE PACKAGING
Papers

BACK THE ATTACK—BUY WAR BONDS

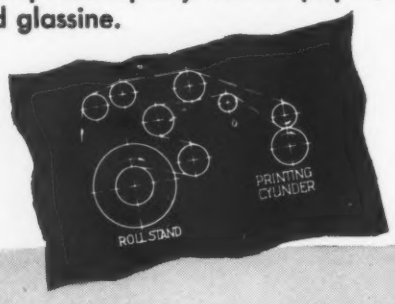
FROM THE BEST THAT'S MADE TO THE CHEAPEST THAT'S GOOD

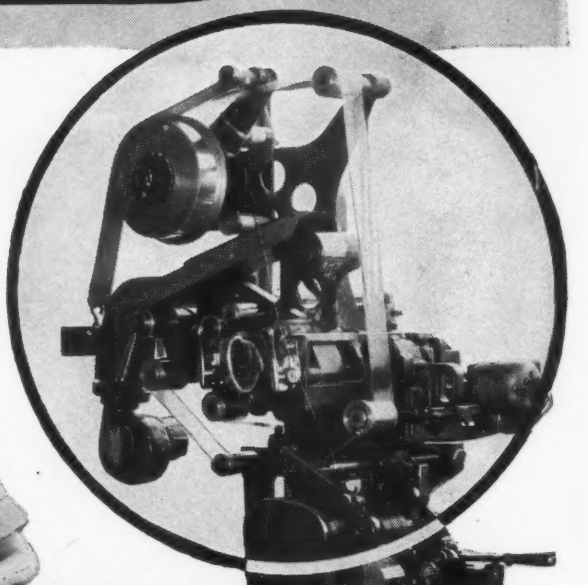
Genuine Greaseproof Coffee Bag Papers · Confectionery Papers · Cereal Wrapping Papers · Laminated Greaseproof Papers · Lard and Shortening Liners · Bakery Product Wraps · Cracker Box Liners · Greaseproof Innerwraps · Wax Laminated Glassine · Opaque Label & Bag Glassine · Packing Industry Wrappings

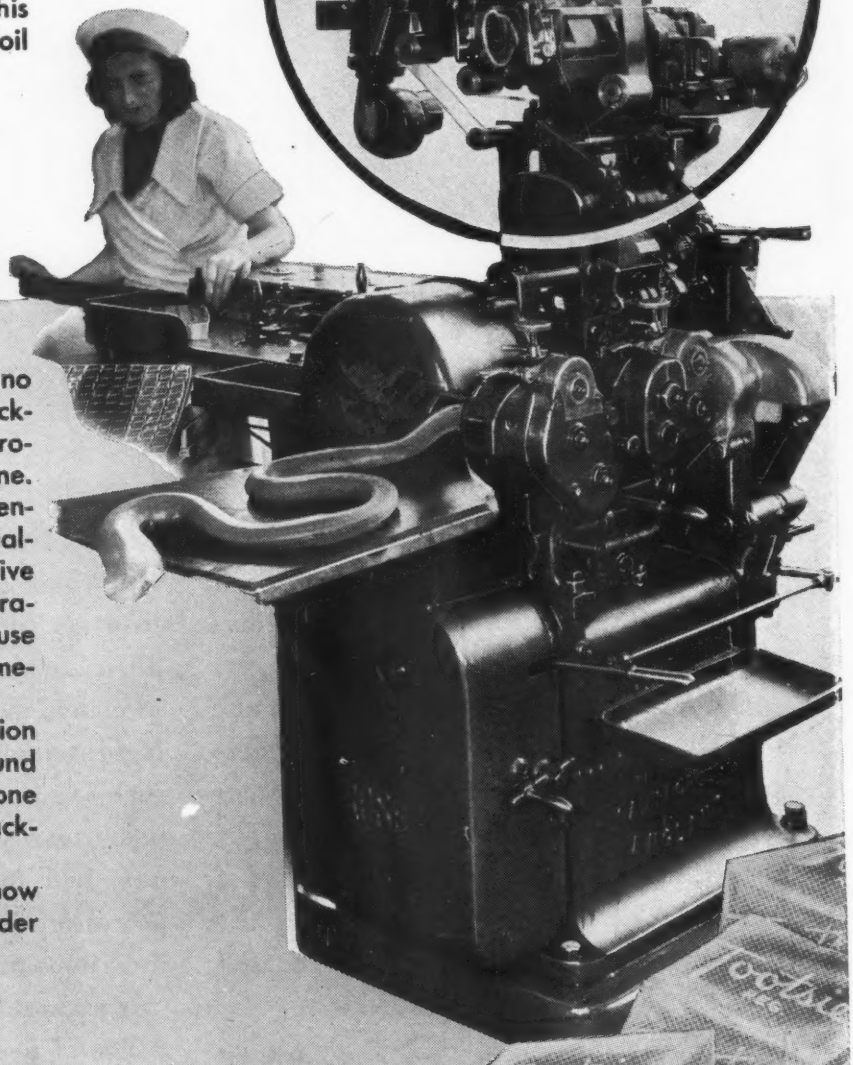
RHINELANDER PAPER COMPANY • MILLS AT RHINELANDER, WISCONSIN, U. S. A.

PLAN NOW FOR POST WAR TO PRINT AS YOU PACKAGE

It's one continuous operation from a roll of plain cellophane to "Tootsie Caramels" ready for packaging. A Champlain rotogravure press has been mounted on and synchronized with a Rose Caramel wrapping machine. This press prints equally well on paper, foil and glassine.







Printing is produced at almost no expense when you "Print As You Package" with a Champlain press synchronized with your packaging machine.

The Patented Speedry wholly enclosed ink fountain, essential for quality automatic printing, is an exclusive feature of these Champlain rotogravure presses. It makes possible the use of highly volatile inks which dry immediately.

Printing is automatic and operation is simple. The roll of stock is unwound from a stand and travels through one or more printing units into the packaging machine.

Priority orders are being taken now for post-war delivery. Write for folder entitled "Print As You Package."

Champlain
COMPANY, INC.
An Affiliate of The Fred Goat Co., Inc., Est. 1893
636 Eleventh Avenue, New York 19, N. Y.

MANUFACTURERS OF ROTOGRAVURE AND TYPOGRAPHIC PRESSES

The can that helps catch life-saving fish will bring you fish you've never caught!

● You've seen plenty of cans like it! It's just a round tin can. But you'd be amazed at its contents today.

It carries lines, lures, hooks—even dried pork rind. In short, it's a complete fishing kit for fliers forced down at sea.

Thousands of these cans are being made to help fliers catch life-saving fish. That's one reason why you can't buy all the things you'd like in cans—certain fish, for instance.

But someday soon you'll get them—and they'll be fish you've never caught! For example: appetizing and nutritious soupfin shark, sablefish, anglers and many other varieties. And they'll come to you as wholesome and ocean-fresh as the salmon, sardines and tuna you still enjoy in cans today. Cans are perfect containers for fish—each a miniature "cooking kettle," sealed and safe.

To do our war job we've developed new ideas and new skills, too. That's why as we look ahead we see *new and better things in Continental cans.*

POST-WAR PLANNING: We'll be glad to discuss future uses or improvements of your product or package and help in your post-war planning. Write Post-War Planning Dept., 100 E. 42nd Street, N Y.C., or Continental Can Company of Canada, Limited, Montreal.

CONTINENTAL CAN COMPANY

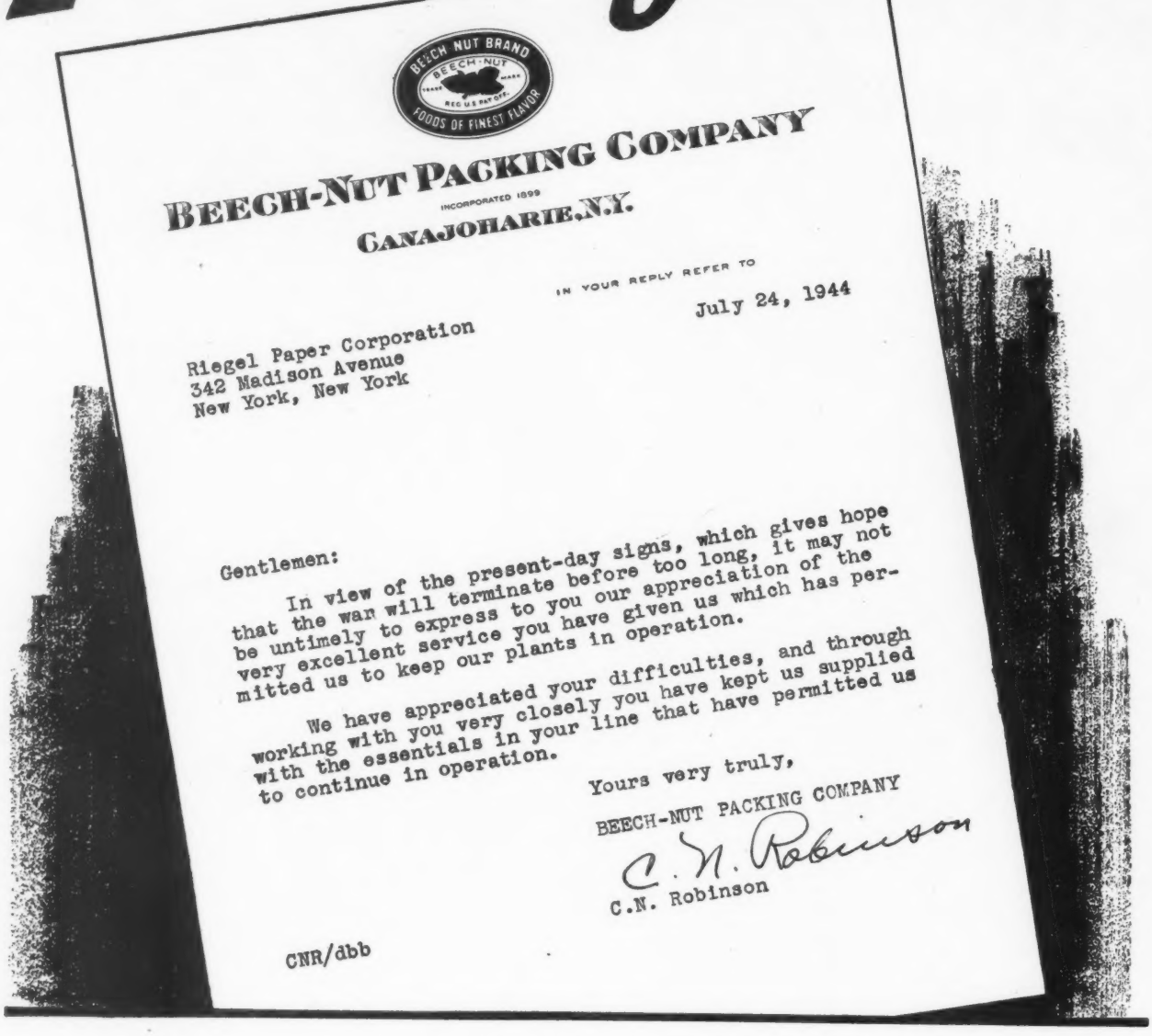
NEW AND BETTER THINGS IN CONTINENTAL CANS

Awarded to Plant 78, Chicago • Illinois

ARMY E NAVY

SAVE TIN CANS—HELP CAN THE AXIS

"EXCELLENT SERVICE"



BEECH-NUT PACKING COMPANY

INCORPORATED 1899

CANAJOHARIE, N.Y.

IN YOUR REPLY REFER TO

July 24, 1944

Riegel Paper Corporation
342 Madison Avenue
New York, New York

Gentlemen:

In view of the present-day signs, which gives hope that the war will terminate before too long, it may not be untimely to express to you our appreciation of the very excellent service you have given us which has permitted us to keep our plants in operation.

We have appreciated your difficulties, and through working with you very closely you have kept us supplied with the essentials in your line that have permitted us to continue in operation.

Yours very truly,

BEECH-NUT PACKING COMPANY

C. N. Robinson

C.N. Robinson

CNR/dbb

This is one in a series of ads in which our customers do the talking — for there is no better time than a "seller's market" to gauge the true worth of any supplier. Riegel is solidly booked with essential business from old customers. But Riegel's wealth of experience in developing new papers and new applications is available to all. Let us help you now to plan tomorrow's packaging changes.

RIEGEL PAPER CORPORATION

342 MADISON AVENUE • NEW YORK 17, N. Y.

Manufacturers of over 230 different protective packaging papers —plain, printed, waxed, lacquered, laminated, embossed—in every case perfected to meet our customers' individual requirements.

111

IT WON'T HAPPEN THERE

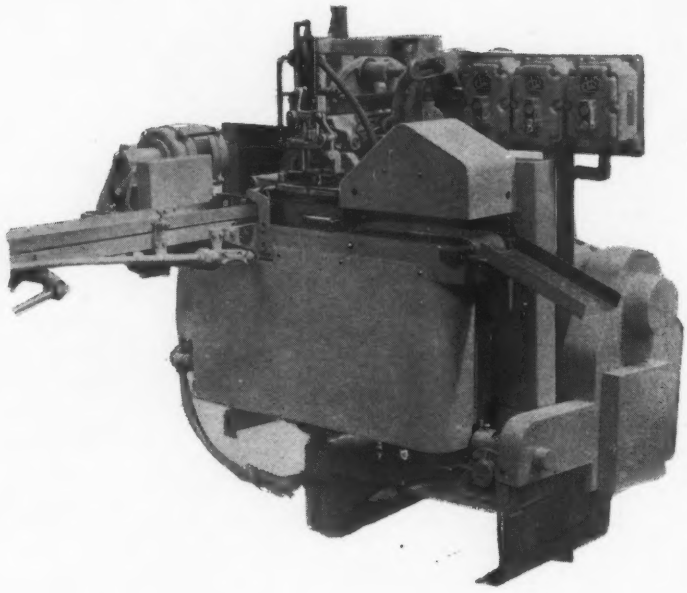
Now Victory seems assured, but you won't find G. I. Joe taking time off to plan his future.

Important to him—sure—but the big job comes first and he keeps on fighting to win.

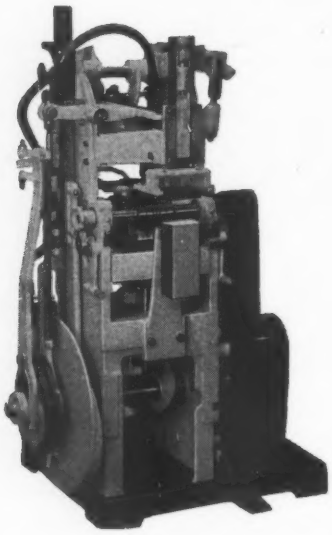
Here at Hazel-Atlas we're continuing our program of mass production of standardized glass food containers until peace is a reality. After that we'll be pleased to share your new packaging problems.

HAZEL-ATLAS GLASS COMPANY, Wheeling, W. Va.

The LABELRITE You've been wanting



is working for Uncle Sam



One of these days we will be able to resume manufacture of Pony Labelrites and Fully Automatic Labelrites destined for YOUR plant; Labelrites destined to peaceful pursuits instead of the waging of War.

The Labelrite above is a fully automatic which seals and labels cartons of small arms, rifle and machine-gun ammunition.

Standard Labelrites have, for years been speeding up production for box manufacturers as well as manufacturers of bottled products with precision labeling that required no "extras" for wiping off excess glue, because Labelrite design prevents the unsightliness as well as the labor caused by application of excess adhesives.

Place a LABELRITE order *now* for Post-War delivery!

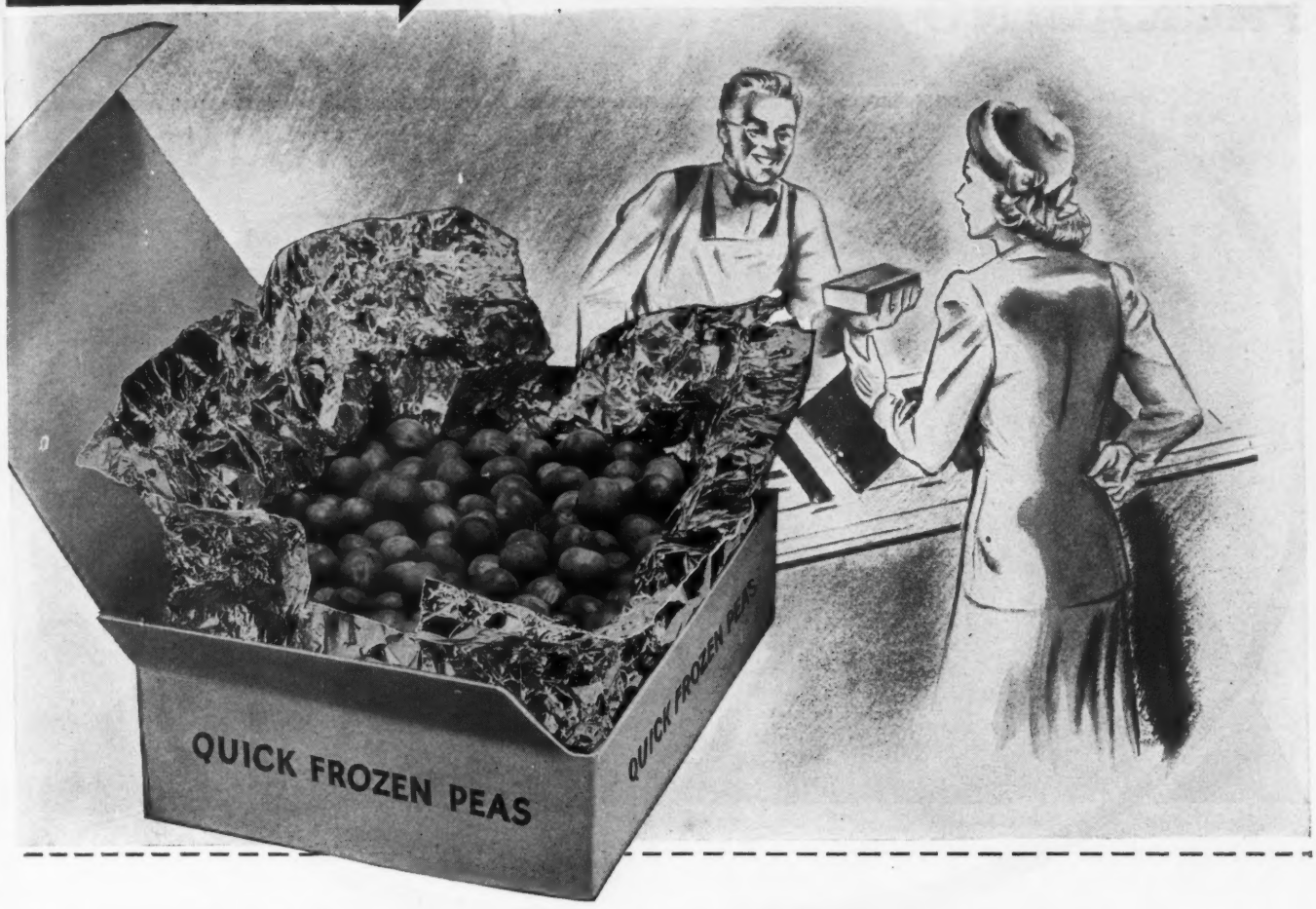
NEW JERSEY MACHINE

CORPORATION

1600 Willow Avenue . . . Hoboken, N. J.

Chicago Office: 325 W. Huron Street

THINGS TO LOOK FORWARD TO: **NO MORE CASEHARDENED PEAS**



Frozen food freshness can be fully protected with *Alcoa Aluminum Foil...*

Frozen food packers have their eye on aluminum foil. See it as a likely solution to dehydration in storage.

That problem can be overcome only by a *truly* moisture-vaporproof package. In aluminum foil, a *metal* barrier, moisture-vapor finds its master. Alcoa Foil can be fashioned into packages that are 100% moisture-vaporproof and which remain that way at below-zero temperatures.

A problem that remains to be worked out is the form that the package should take. For quick frozen meats and fowl it may well be a hug-wrap. For vegetables, perhaps a foil-lined carton. For fruits and prepared foods with a fluid content, a heat-sealed foil bag in a carton.

Co-operative tests to find the answers to these questions about packaging frozen foods in Alcoa Aluminum Foil may be desirable. If you would like to participate with Alcoa in packaging research on your own products, write ALUMINUM COMPANY OF AMERICA, 2129 Gulf Building, Pittsburgh 19, Pennsylvania.

ALCOA ALUMINUM FOIL CAN MAKE PACKAGES...

Airtight
Moisture-Vaporproof
Waterproof
Lightproof
Greaseproof
Siftproof
Odorproof
Insectproof
Verminproof

ALCOA *Aluminum Foil*

Foresight in PACKAGING *calls for* Clearsite* CONTAINERS

—because they are SHATTER-PROOF, SEAMLESS Clearsite* Vials

Clearsite is best for all Types of "pocket-or-purse" products

Its RESILIENCE protects the contents!

* Registered U. S. Pat. Off.

There's an unquestioned VALUE in Clearsite containers. To begin with, they have eye-appeal. The lustre of clear transparency, plus the color of labels processed in production gives Clearsite vials a distinction that adds prestige to your products. They have more positive protection, because they resist breakage; they're *shatterproof* and *seamless!*

Clearsite values are clearly demonstrated by the ever-growing number of manufacturers using these *modern* containers.

Our staff of Packaging Engineers are at your Service—without obligation.

CELLUPLASTIC CORP.

CELLUPLASTIC CORPORATION

40 AVENUE L NEWARK, N. J.

WEST COAST REPRESENTATIVES CONTAINER SERVICE CO., 1266 North Western Avenue, Los Angeles 27, Cal.

KIDDER POINTERS

KIDDER THREE POINT PRESS

No. 3.

Observations of trends and indications in packaging . . . noted by the manufacturers of Kidder "3-Point" Presses, Kidder Press Company, Inc., Dover, N. H.

A recent 31,000 mile inspection tour of the Central, South and Southwest Pacific areas reveals that *insofar as packaging is concerned*, Army Ordnance has licked the jungle. One of the biggest problems was to design a method of packaging that would withstand sudden extremes of temperature. An air transport temperatures problem was licked by a type of container that expands and contracts without breaking the outer protective seal and covering.

More than *300,000,000 bars and packages* of nationally known brands of candy in their familiar commercial wrappers were procured by the QM Corps during the first quarter of 1944 for resale overseas through the Army Exchange Service, ASF.

American troops will get about two-thirds of the country's total output of *chewing gum* for the remainder of 1944, requirements being about *3,133,319,000 sticks*. For the Army, each stick is foil-wrapped, with each package of five sticks foil-wrapped — a large percentage being khaki-colored for camouflage purposes.

Hailed as *the biggest single change in redesigning attempted in modern grocery merchandising*, Pillsbury Flour Mills' vast postwar planning program includes a complete new design for package labels, including color groupings, for their many specialty products. Sound reasons for redesigning now: the trend toward self-service in food stores giving marked advantage to the well-dressed product . . . a common package theme can help the new products trade on the brand acceptance enjoyed by the old.

Visibility, a powerful force in modern merchandising, keynotes DuPont Cellophane's advertisement, "*Idea Corner for Postwar Package Planners*". Showmanship in family packaging, informative labeling plus visible unit packages showing product quality, good-appearance products peeking out of packages . . . adequate protection geared to rapid turnover, self-service and convenience — size, shape, quantity, ease of use are among the impulse-buying suggestions.

"*Packages and People*", a pamphlet published by Cellophane Division, E. I. duPont de Nemours & Co., Inc. (Nemours Building, Wilmington, Delaware), is well worth looking over to be in the know about postwar packaging. Vol. 8, No. 1, includes results of a study of *impulse buying* in food, department and chain stores . . . revealing that *display* accounted for the great majority of consumer impulse-purchases. The Company offers a limited quantity of condensed versions of these buying surveys.

As late as June, 1943, not a single plane designed expressly for cargo handling was in service on this hemisphere . . . hauling was all done with bombers and commercial planes converted for cargo handling. Almost overnight, *air cargo has grown* from light express *into a full-fledged common carrier*. By 1945, war or no war, it is expected that transport planes in the 50 to 60 ton class with 15 ton cargo capacity will be commonplace.

"Because *the paper container* is a one-time-use package, it provides the maximum sanitary factor . . . when members of an industry compete with one another, they must think of their package as having sales value. The clean-looking paper container *certainly can give a good account of itself* in this respect," says William S. Lee of Sealright Pacific Ltd. in "Western Canner & Packer" for May.

A seven-year study by California Tech. at Pasadena has uncovered many possibilities for *new industrial uses of silver*. Manufacturers and users of *sanitary wrappings and containers for food* will be much interested in the protection features of these new silver materials. Silver ion concentrations in water purification, silver for rendering sea water drinkable, silver compounds as a protection against metal corrosion caused by brine and self-sterilizing surfaces through silver with various neutral materials are among the possibilities . . . also plastics with new silver materials incorporated which will form *synthetic coatings* (bonded to a surface by brushing, printing, etc.) *on which no microbe forms can live* more than a few minutes.

KIDDER PRESS COMPANY, INC., *Printing Machinery*, Dover, N. H.

Wrapper Achievement

OF THE MONTH

Watch for another Wrapper Achievement of the Month.

Packaged with eye-arresting attention to self-service and shelf display, Jack Sprat Soda Crackers from Marshalltown, Iowa, feature a genial, ruddy-cheeked Jack Sprat. Crunchiness of the crackers is assured by the heavy waxed wrapper used as a colorful carton seal. A special process developed by Waxide Company is used for the cartoon figure, while clear red and blue on a yellow background lend impulse-buying appeal to this package achievement on Kidder "3-Point" Presses for which Kidder salutes

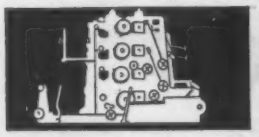
WAXIDE PAPER COMPANY
Kansas City, Missouri
Manufacturers and Printers of
Waxed Paper

KIDDER ENGINEERS THINK AHEAD ON PACKAGING PROBLEMS

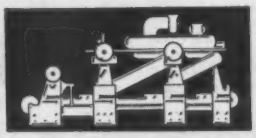
PRECISION in intricate units is what the Navy Department has been getting from Kidder for the past two years . . . but when this proud war assignment has been completed, Kidder will resume manufacture of quality printing equipment bearing the identification "3-Point" Press.

Meantime, Kidder engineers are thinking ahead with you about your peacetime needs and wants in the paper converting and packaging fields. In many plants today, printing equipment lags way behind expectations of package designers. Those plants will find out that someone else can do their work better, unless they make plans NOW to re-equip with capable, proven machinery. Wrappers with sales appeal . . . four, five and six-color masterpieces of buy-impelling decoration . . . are in increasing demand by foresighted packagers who, like Kidder, are making studies of the changing buying habits of America.

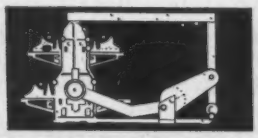
High-speed multi-color letter presses . . . aniline presses . . . gravure presses . . . and a special narrow, 4-color rubber plate press intended primarily for cellophane are all in the regular Kidder "3-Point" Press line — and our engineers can build special printing machinery for individual packaging jobs.



MULTI-COLOR LETTER PRESSES
for waxed paper, box wrappers, etc., rewound or sheet-delivered — up to 72".



MULTI-COLOR GRAVURE PRESSES
for cellophane, foil, pliofilm, etc. — rewound or sheet-delivered — up to 36".



MULTI-COLOR ANILINE PRESSES
for decorative papers, cellophane, glassine, etc. — up to 52".

SLITTERS & REWINDERS
for paper mill finishing rooms and small-roll, high-speed slitting — up to 72".

KIDDER

Manufacturer of "3-Point" Presses — so-called because they fulfill the three major requirements for perfect printing.

CONTROL OVER THE PAPER

PROPER DISTRIBUTION OF INK

ACCURACY OF THE IMPRESSION

KIDDER THREE POINT PRESS

KIDDER PRESS COMPANY, INC.,

Printing Machinery, **DOVER, N. H.**

This is what they said about the 1944 PLASTICS CATALOG

"Encompasses every branch of plastics from materials to newly developed manufacturing methods."
Aero Digest

"More than 1000 pages of informative and authoritative material, to encompass the expanding scope of plastics production and development, usher into public view many new materials in manufacturing methods."
Tool & Die Journal

". . . brings up to date the history and achievements of plastic materials in every branch of industry."
Commercial Aviation

". . . 990 pages of review and forecast of the technical studies and charts, prepared by more than 200 experts in all fields, from aviation to rubber." *News Week*

". . . Plastics Catalog for 1944 will go far to spread the latest information about those products of the synthetic chemist that are so important in every phase of our wartime activities."
N. Y. Herald Tribune—Book Review Section

"This is the catalogue of an industry. . . ."
Railway Mechanical Engineer

". . . the Plastics Catalog gets bigger and better with each new edition . . . handsomely bound and both profusely and colorfully illustrated."
Architectural Record

". . . 1944 Encyclopedia of plastics in the eighth edition of this beautiful important and up-to-date volume on all phases of plastics. It is really a college course in plastics." *Rayon Textile Monthly*

". . . 989 pages of who, what and why, in the plastics industry . . . plus the usual store-house of facts and ideas, materials, methods and machinery."
Modern Industry

and this is what we say about the 1945 EDITION

Now taking shape after nearly a year of research and field surveying, the 1945 PLASTICS CATALOG will be, without doubt, the finest and most complete ever produced. Based on the solid foundation of all of the fundamental facts of plastics—all of the molding materials, laminates, the synthetic rubbers and fibers, the cast resins, the machinery and methods of production—the 1945 Plastics Catalog will include all of the latest developments in plastics. There will be new articles on new materials and new techniques. The entire book will be revised, re-edited and re-illustrated.

The complete directory to the plastics industry will include all of the changes and additions made in the field during the past year.

The charts—exclusive in the PLASTICS CATALOG—of Plastics Properties, Solvents, Plasticizers, Synthetics, Formulae, etc., will be expanded and enlarged. There will of course be a glossary, a directory of trade names, a directory of Educational Institutions and other features too numerous to mention.

$6.00 per copy. Canadian, $8.00 . . . . Foreign, $7.00

PLASTICS CATALOGUE CORPORATION

122 EAST 42nd STREET NEW YORK 17, N. Y.

WHAT'S YOUR CASE LINER PROBLEM?

SUBMERSION PROOF?
CLOSURE?
SLOW OPERATION?
HANDLING?
SIZE?
LEAKERS?
SPECIFICATION?
LATE DELIVERIES?

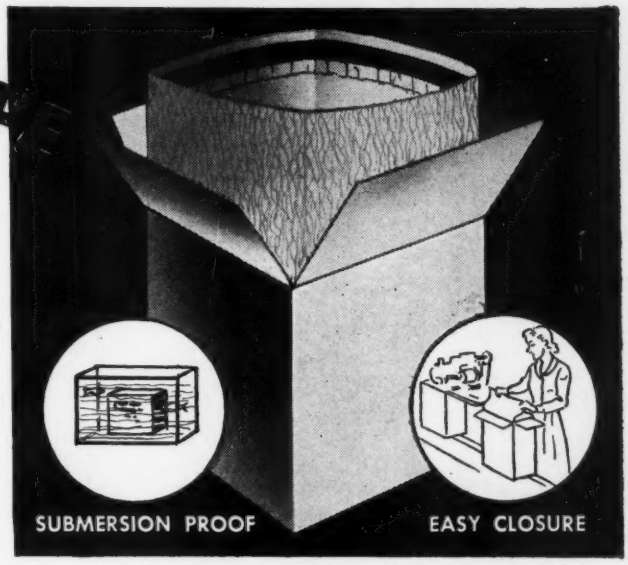
Here's the answer! MEHL BAGS AND CASE LINERS

For Quartermaster . . . Ordnance . . . Army . . . Navy . . . and Air Force shipments . . . domestic and overseas. Meet all specifications and available in sizes to meet individual needs.

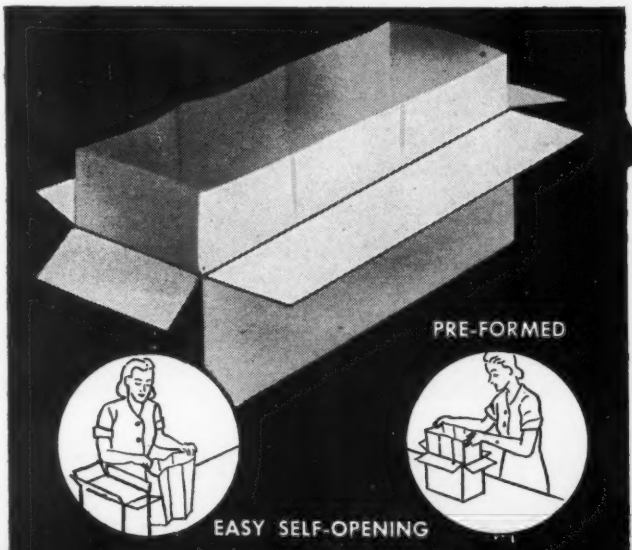
PRESSURE SEAL TYPE

- For maximum speed and efficiency on the packing line.
- For ABSOLUTE SUBMERSION-PROOF AND EASY CLOSURE.
- NO BRUSH . . . . NO FUSS . . . . NO MUSS.
- Economical in every way.

A flat type liner constructed with self-sealing closure top. By simply removing the protective cellophane strip and applying pressure a permanent, watertight seal results. No heat-sealing equipment or other adhesive required. It's fast . . . easy . . . positive.



V-TYPE EASY OPENER



When requirements call for a quick easy-opener or a pre-formed liner requiring no mandrel or form MEHL V-TYPE EASY-OPENER is the answer. It's easy to handle . . . simply place an unopened liner into a shipping container . . . open with spreading motion . . . and the liner instantly shapes itself to the container ready for contents and fold-over for adhesive seal closure.

• • •

PHONE . . . WRITE OR WIRE YOUR DISTRIBUTOR OR DIRECT

Other Mehl Products

- ★ Cellophane and Parchment Bags
- ★ Cellophane Ordnance Bags for Method 1 and 1A
- ★ Ordnance Grade C Bags and Tubes
- ★ Envelope and Pouch Style Case Liners
- ★ Specialty Bags — all types — all sizes — all quantities

MEHL MFG. COMPANY

Division of Sydney-Thomas Corp.

CINCINNATI 2, OHIO

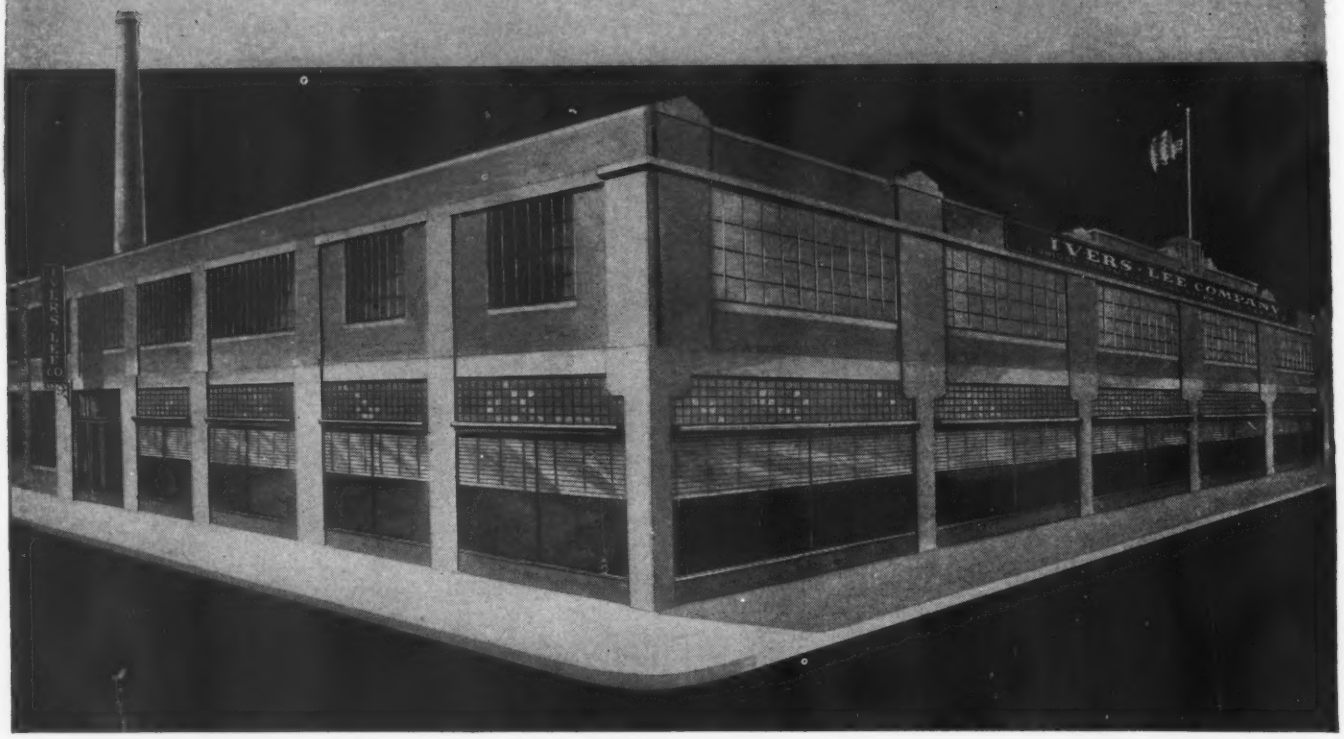
Distributor: — PACKAGE PRODUCTS CO., 221 N. LaSalle Street, Chicago

A new "Lift to Living" every Thursday evening

BEGINNING THURSDAY, SEPTEMBER 7

Owens-Illinois Glass Company presents Fred Waring and his Pennsylvanians in a program designed to give a new "Lift to Living" to every listener, every Thursday Evening at 7 p.m. E. W. T. over the Blue Network. Each week enjoy this outstanding radio entertainment on behalf of Duraglas containers—the containers that also give a "lift to living." Consult your newspaper for local time and station.

HOME OF *A THOUSAND and ONE* UNIQUE PACKAGES



You see here far more than potential packaging capacity for your product—you see the home of an idea—unit-wrapping. This unique method of packaging pills, tablets, capsules, liquids, creams and powders, has proven so basically sound—so inherently practical—as to have solved thousands of important packaging problems. The solutions, which range all the way from a single-unit physician's sample to multiple-dosage sale packages, represent a truly remarkable packaging laboratory. This experience is what you find at Ivers-Lee—it may prove to be of real value to you.

Available also, are the very definite advantages of Contract Packaging—Economy—Dependable Deliveries—Freedom from packaging detail and overhead. For this superb plant of 60,000 square feet is equipped with every modern packaging facility—automatic machinery of our own design for endless operations, Sterilamp Protection, individual production rooms with controlled air-conditioning and efficient, uniformed operators who work to music. We: Receive your product in bulk, for storage in one of our three, separate, insured warehouses—Unit-wrap according to your instructions—Complete your packages as you may require, or—Return the Sanitape-Sealtite units to you in bulk containers for finished packaging in your own factory. We of course provide a detailed monthly inventory of your account.

You may find that *Sanitape-Sealtite will solve one of *your* problems—increasing production capacity without addition to your plant. We shall be glad to discuss the possibilities.

* Sanitape-Sealtite is a unique method for packaging pills, tablets, capsules, creams and powders, by which each unit or unit dose is sealed in its own air-tight compartment—assuring convenience, protection and maintained efficacy.

PACKAGES, METHODS AND MACHINERY FULLY COVERED BY U. S. AND FOREIGN PATENTS.

ADVERTISING IN *Action*

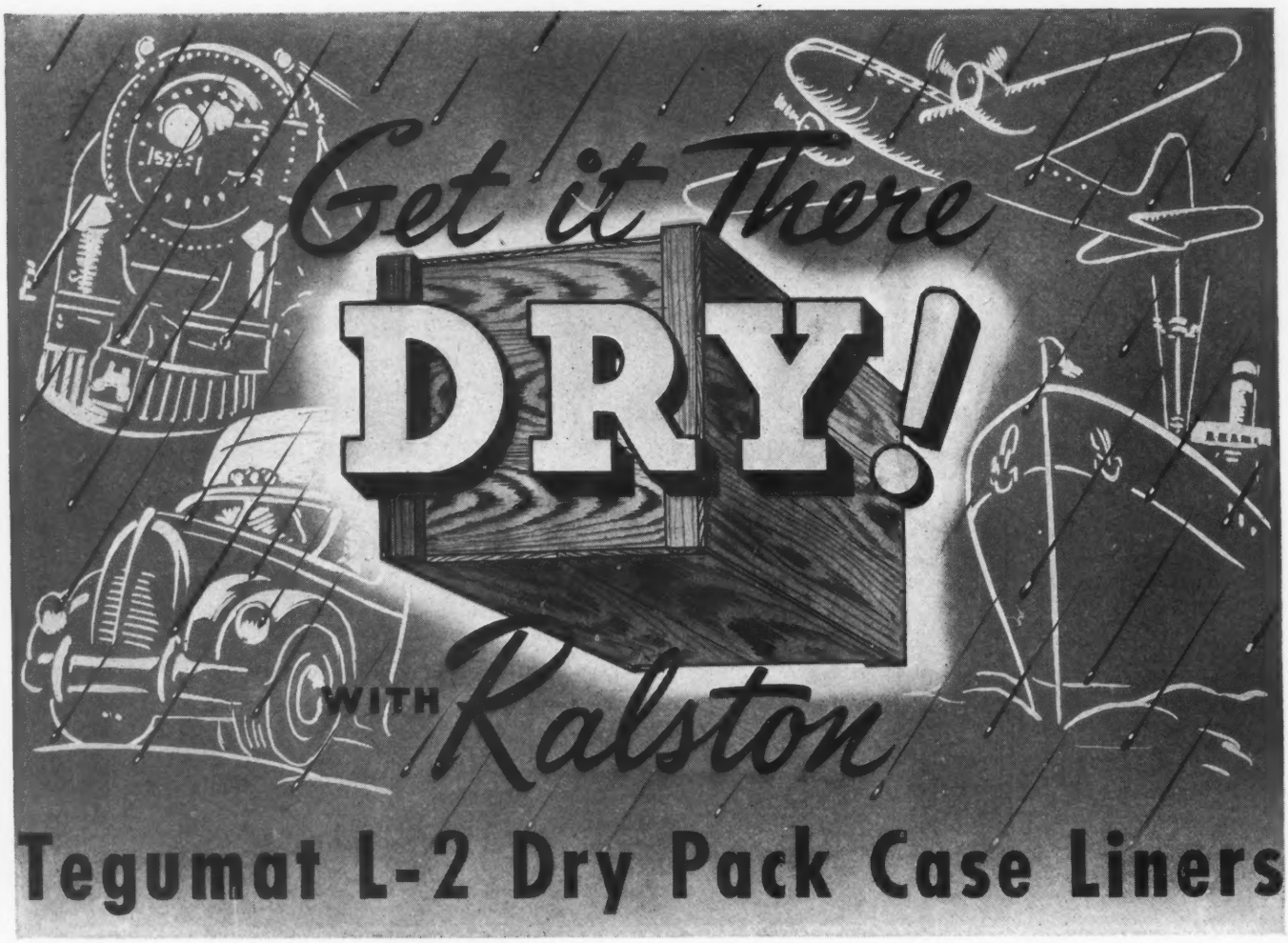
TO SAVE IS TO SERVE

There are 60 pages of stimulation and helpful guidance in this BALL BLUE BOOK, designed to help homemakers CONSERVE FOOD. Booklets and folders offer advertisers an ideal opportunity to guide Americans in essential wartime activities and impending postwar adjustments.

FORBES THE SHOP BY THE SEA **LITHOGRAPH CO.**

P. O. BOX 513 · BOSTON 2

NEW YORK CHICAGO CLEVELAND ROCHESTER



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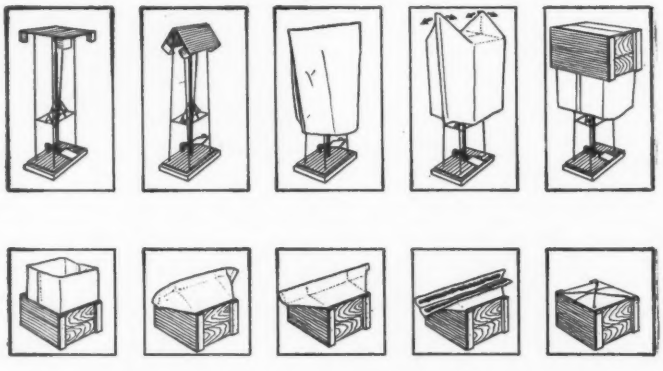

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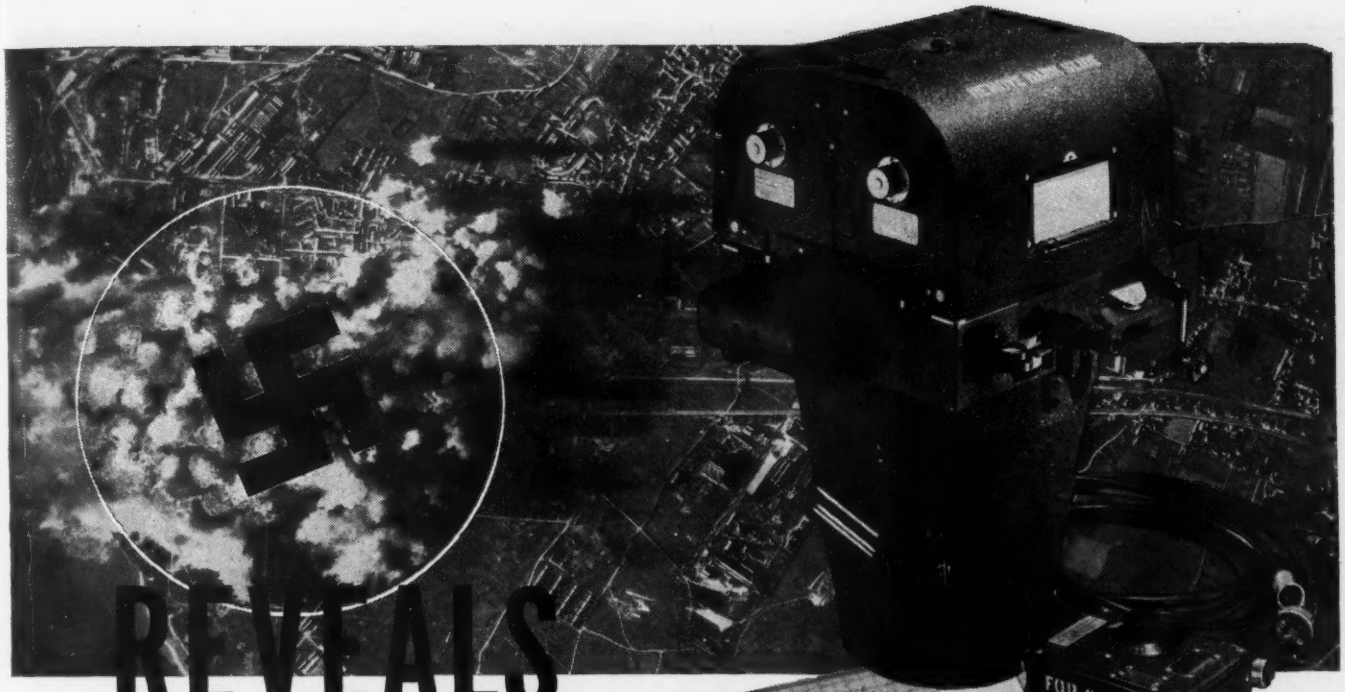

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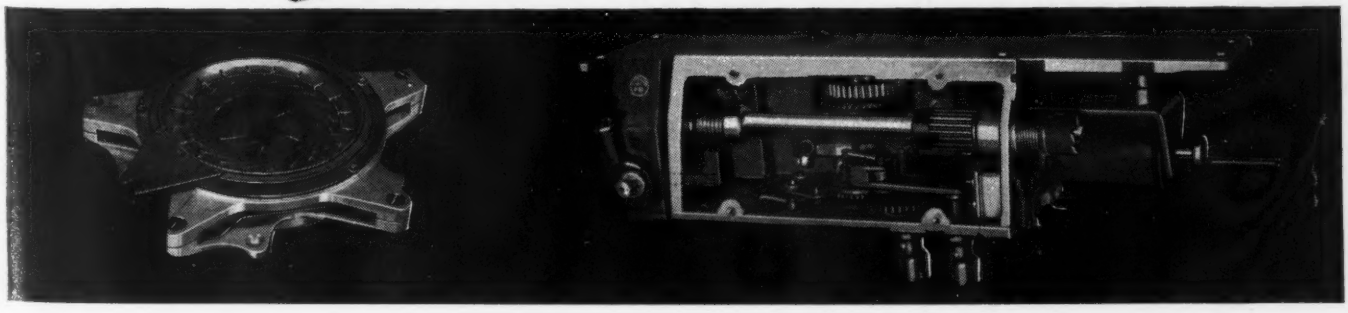

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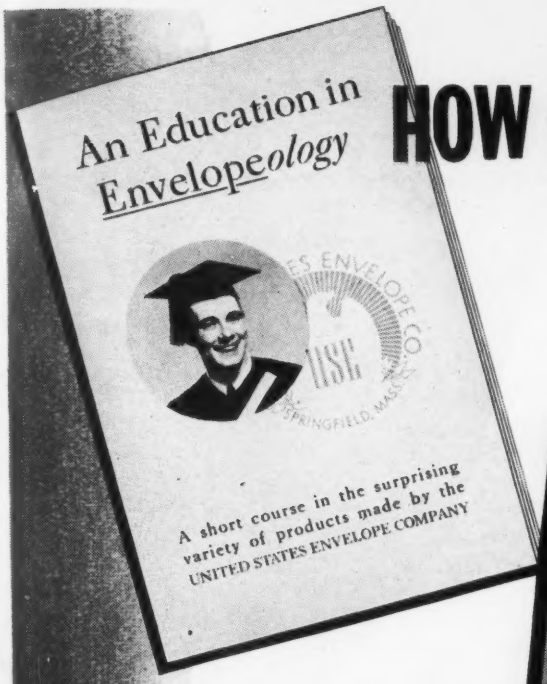

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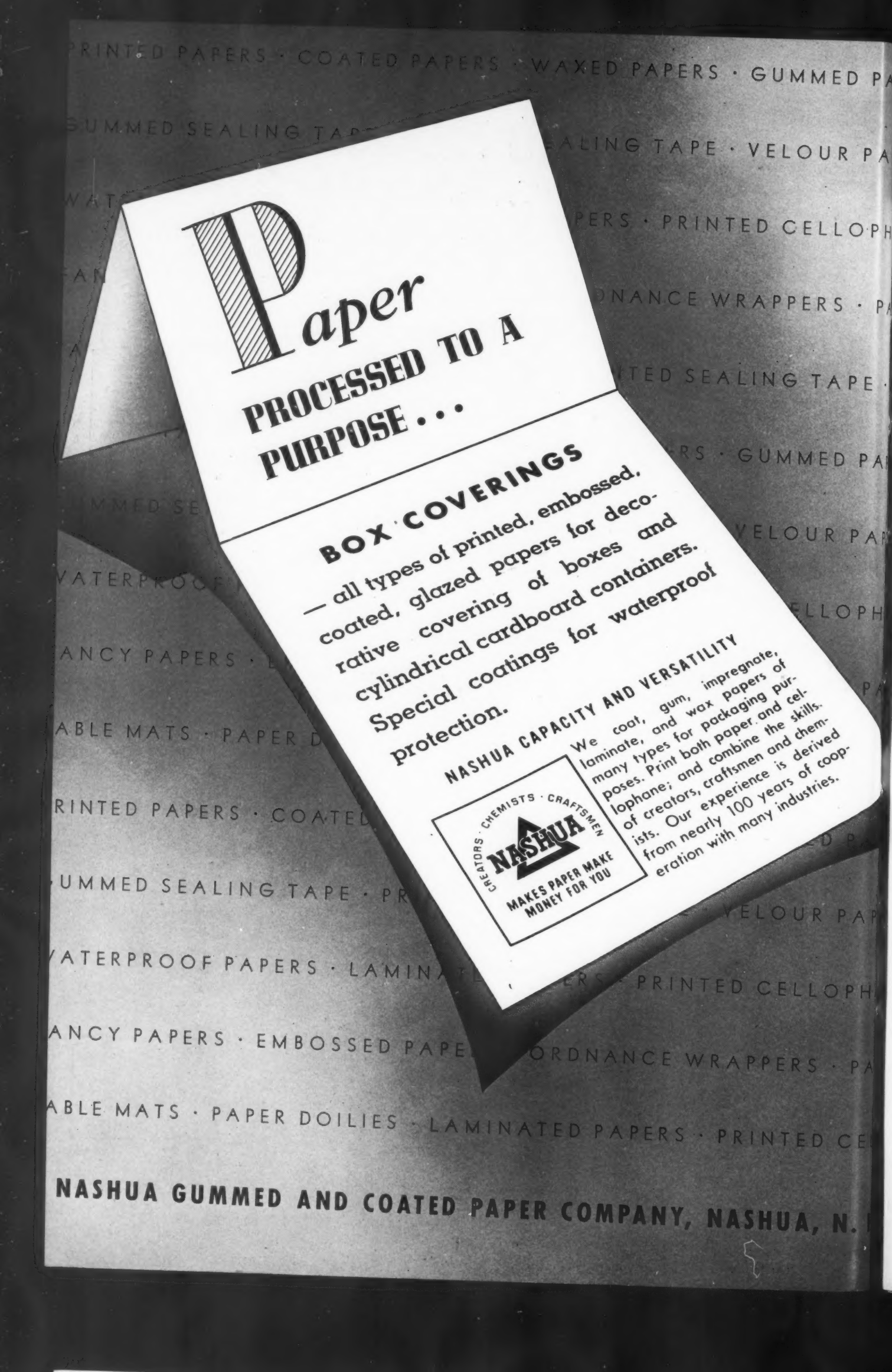
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MODERN PACKAGING

VOLUME 18 SEPTEMBER, 1944 NUMBER 1

Unsatisfied machinery needs... a survey

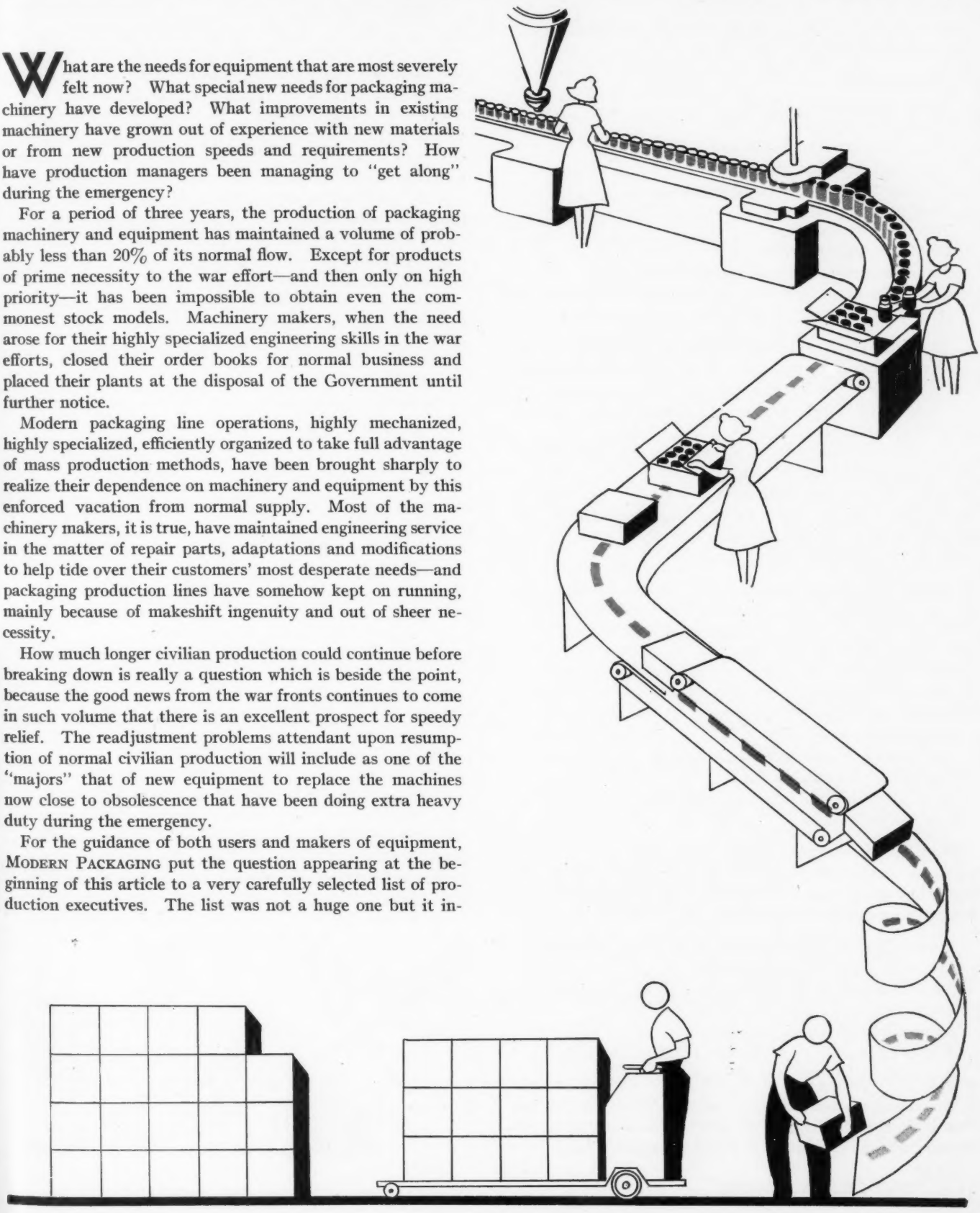
What are the needs for equipment that are most severely felt now? What special new needs for packaging machinery have developed? What improvements in existing machinery have grown out of experience with new materials or from new production speeds and requirements? How have production managers been managing to "get along" during the emergency?

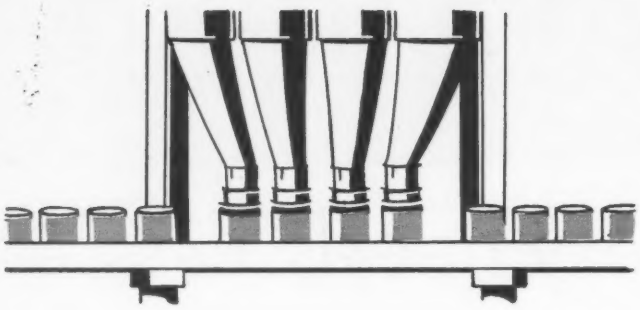
For a period of three years, the production of packaging machinery and equipment has maintained a volume of probably less than 20% of its normal flow. Except for products of prime necessity to the war effort—and then only on high priority—it has been impossible to obtain even the commonest stock models. Machinery makers, when the need arose for their highly specialized engineering skills in the war efforts, closed their order books for normal business and placed their plants at the disposal of the Government until further notice.

Modern packaging line operations, highly mechanized, highly specialized, efficiently organized to take full advantage of mass production methods, have been brought sharply to realize their dependence on machinery and equipment by this enforced vacation from normal supply. Most of the machinery makers, it is true, have maintained engineering service in the matter of repair parts, adaptations and modifications to help tide over their customers' most desperate needs—and packaging production lines have somehow kept on running, mainly because of makeshift ingenuity and out of sheer necessity.

How much longer civilian production could continue before breaking down is really a question which is beside the point, because the good news from the war fronts continues to come in such volume that there is an excellent prospect for speedy relief. The readjustment problems attendant upon resumption of normal civilian production will include as one of the "majors" that of new equipment to replace the machines now close to obsolescence that have been doing extra heavy duty during the emergency.

For the guidance of both users and makers of equipment, MODERN PACKAGING put the question appearing at the beginning of this article to a very carefully selected list of production executives. The list was not a huge one but it in-





cluded companies whose operations were typical of conditions in the following lines:

Food products
Drugs and pharmaceuticals
Proprietary remedies
Manufacturers of household articles
Manufacturers of explosives
Manufacturers of photographic supplies
Meat packing plants
Toiletries and cosmetics
Distilleries and breweries
Manufacturers of radios and parts
Chemical manufacturers
Building materials

Quantitatively, the responses in comparison with the list used were such as to make any direct mail man green with envy. Much of the information given was accompanied by a "confidential" label. Obviously answers of this character are difficult to tabulate.

The first question read: "If you could get prompt delivery, what packaging equipment would you install—first—second—third?" The answers indicate a tremendous dammed up desire for practically every type of machine known in the packaging field. Specific mention was made not once but many times of the following:

Labeling Machines—automatic and semi-automatic
Collapsible tube fillers and closers
Wrapping machines for small unit packages
Cartoning machines
Fillers for dry products
Fillers for liquid products
Capping machines
Crimping machines
Automatic bottle unloaders and packers
Cellophane wrapping machines
Envelope forming-filling-sealing machines
Case sealing machines

Many of the foregoing reflect needs growing out of new products such as dehydrated foods. Other emphasize the uses of new materials. More highly specialized needs are indicated by calls for machines like the following:

Automatic wrapping equipment for sensitized sheet stock
Automatic scales and sewing units
Automatic feeding devices for carton gluing machines
Bottle cleaners for alcoholic liquors
Automatic coffee bagging equipment
Automatic mechanical applicators for secondary closures
Automatic strip-stamp machines

One response laconically sums up the situation for all industries in the following: Practically all machines will need replacing or rebuilding after the present emergency."

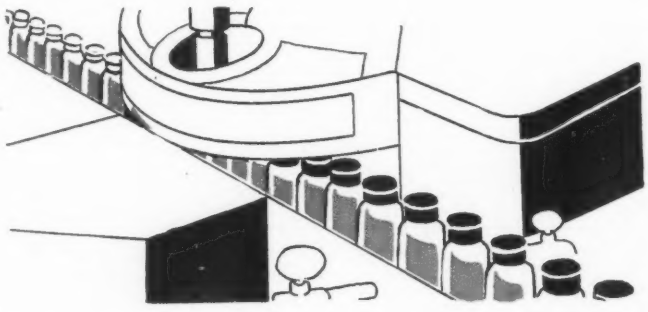
Many decades ago, tradition has it, one of the United States Patent Office employees quit his job because he was convinced there was nothing further to invent—the job was a dead-end street, he thought. The answers to the second question would probably prove very disturbing, now, to his troubled spirit. That question read: "What special NEW needs as to packaging machinery have developed in your plant?" The answers constitute a challenge to the manufacturers of packaging machinery which—judging from their past records—they are fully qualified to meet.

Principal desire is for increased speed and more fully automatic operation. This, of course, is partly a direct outcome of the frantic pressure for more production attendant upon the emergency conditions although increased speed is a constant objective in the package production line in order to reduce costs for the consumer. The manpower shortage is obviously also an important factor now. Implicit in the desires expressed are two things: first, that the productive economy of this country will be fully prepared to run in high gear; and second, that it will be able to develop highly mechanized lines that will tie up fewer operators so that the human element can be released for more important occupations. This will be a vital point in the vastly increased output which will be expected from America after the war.

Specifically, here are some of the things that production managers are going to ask for:

Equipment for rapid and automatic filling of ampoules with powders and liquids
Machines for cord-tying odd and variable shaped packages
Simpler and quicker mechanisms for crimping metal containers
Unscrambling tables and conveyors for jars
Automatic weight controls for close tolerance detection in small jars ($^1/_8$-, $^5/_8$- and 1-oz. capacity)
High-speed mechanisms for envelope filling and closing
High-speed and economical automatic machinery for filling liquids and powders under sterile conditions
Automatic equipment for sealing large-mouth jars
Automatic equipment for stuffing, banding and closing of such products as frankfurter sausages
Machines for automatic operation on moisture-vaporproof packaging materials
Automatic marking machines for coding and dating packages
Mechanical means of applying kraft tape to bundle building material in sheet form

These requests, be it repeated, represent unsatisfied desires. Some of the mechanisms wanted may already be in existence, and without a doubt the machinery makers have designs on the trestleboard in anticipation of other expressed needs. It is hardly to be supposed that machinery users have been secretive toward their suppliers in the matters of these



needs. One can only assume that just as soon as the green light appears important announcements from the machinery companies may be expected.

One call deserves special mention. It is that of a distilling company for improved machinery for the automatic and rapid application of secondary closures. These secondary closures are an imperative necessity to protect the consumer from tampering, pilfering and various hi-jacking operations. So far nothing satisfactory has been offered to take the place of hand application. The secondary seals, the distiller points out, ought to be dried quickly and neatly and still be explosion proof. The drying speed must be sufficient to set the seal firmly within 6 ft. and work at a speed of about 120 bottles per minute.

If any engineer or inventor has blueprints for such a machine in his vest pocket, MODERN PACKAGING readers would like to know about it.

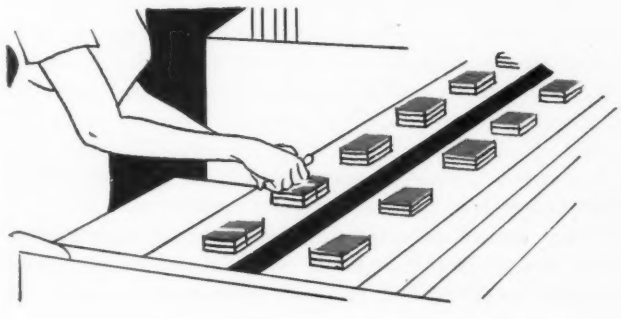
Here are some more of this distiller's specific desires:

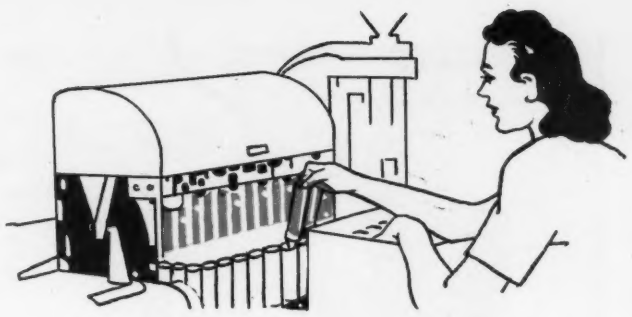
Automatic equipment to unload bottles from shipping cartons and feed them in a single line to the cleaner
Synchronization of all equipment to maintain positive control of each bottle during the entire packaging operation
Device to detect and reject bottle caps without liners
Automatic mechanisms for packing shipping cartons at end of packaging line
Automatic inspection devices (perhaps using the electric eye) to inspect the product for clarity, rejecting filled bottles that are below standard

Unavoidably, there was some over-lapping of the answers to the foregoing question and the one which followed, namely, "What improvements would you suggest in existing machines?" Here again there is *no foggy thinking*, as very few of those who responded resorted to *generalities*.

One production manager anticipates more complete streamlining of all filling equipment, "not only in so far as the finish of the machine is concerned, but toward the elimination of a good deal of the weight in the present moving parts." Another suggestion calls for powder fillers that are "fast, accurate, easily cleaned and easily changed." Another comment is that powder fillers should be designed to prevent spilled powder from getting into the mechanism. Another remarks —with a slight trace of acid—"I have never seen what I would call a good powder filler." Capping machines, says another, could be lighter in weight and easily portable. Other calls are for the following:

Development of new machines for wrapping bottles in transparent wrappings
Can washing equipment
Fully automatic crimping machines with speeds up to 80 per minute
Timed brakes (in continuous slicing machines) to eliminate auxiliary weighing





Mechanical detectors to stop machinery when materials (such as caps, transparent wrapping films, etc.) are defective or become jammed
More uniformity of application torque (screw capping equipment)

Labeling machines come in for their share of constructive criticism. Whether attainable or not within the limits of practicality and economy, here are the desires expressed for future improvements:

There should be cleaner operation of labeling machines
Labeling machines should have exact registration of label, avoiding excess glue around the edges
Devices should be improved for feeding labels properly in and out of label racks
There should be automatic trips provided for semi-automatic labelers

"Present bottle labelers have either one of two main faults," says one critic. "One machine puts the glue film on the bottle, then by a second operation places the label on the glue film. Another machine puts the glue on the label first, then places the glued label on the bottle. In the first case, it is practically impossible to register the glue film and the label exactly in the same position; the result is either that bottles have glue smudges or that the label edges are loose—or, in many cases, both.

In the second case, the result is a package on which it is impossible to eliminate 'picker marks,' that is, slight tears at the four points where the label is held in the magazine."

It must be remembered that many of these production executives are competent engineers. Suggestions like the following, applicable to many different types of machinery qualify them as such:

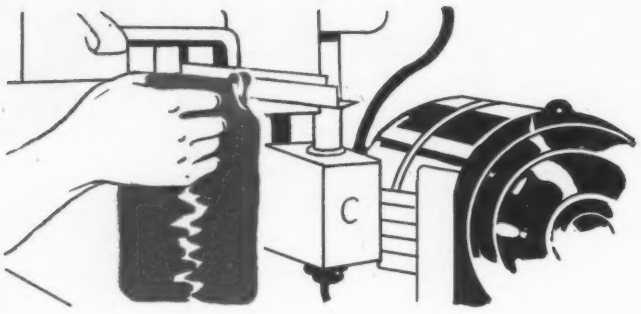
"Constant motion of the rotary type could be used more extensively in connection with inverted air bottle cleaners (if no indexing is required) as well as on labelers and tube fillers."

"Can't the engineers and designers plan on fewer wearing parts and fewer adjustments?"

"We look forward to the development of standard packaging equipment for use with the many new types of packaging materials that require such special treatment as heat sealing."

"Machines should be so designed as to make for easier repairs and replacement of parts."

"Most bottle cleaners which employ compressed air as the cleaning medium either do not use a long enough air tube to introduce the air blast beyond the shoulder of the bottle, or else they do not have a closed air system and thereby permit foreign material to enter with the air. Further, the lubrication systems are designed in such a manner that frequently oil or grease comes into contact



with the air tubes, thus collecting lint or other debris on these tubes and the dirt later appears in the bottles."

"Present filling machines can be improved by designing a dripless filling tube."

"Expensive or revenue-paying products that demand accurate filling could make good use of a device which insures a simple and quick method of accurate setting and changing the fill-height."

"We'd like to see somebody present a relatively small filler, either a 21- or a 24-tube machine that can operate at the rate of 120 to 130 quarts per minute."

"Could cappers be constructed, synchronized with fillers, so that the discharge turret of the filler serves as the intake turret of the capper?"

"It would improve cappers to put the hopper at the base of the machine and provide a vertical bucket conveyor to lift the caps to the sorter."

(This idea was put into actual practice, by means of a device contrived by themselves, in the plant of the American Molasses Co. See MODERN PACKAGING, August 1944, page 96.)

"A good fool-proof and dependable system of indexing round bottles would be very welcome."

"Strip stamp machines must be improved so they will be capable of greater speeds and wider variety of sizes."

"An efficient transfer-plate or disc—or other method—to transfer bottles from a table conveyor belt to a bottle packer would be welcome. This is not as simple as it sounds—bottles tend to stick to the rubber, and the transfer apparatus must not dig into the belt."

"Carton sealers should be made so that they can handle at least a day's supply of cold dextrine glues and be used intermittently without clogging."

There is ample evidence that these various suggestions come not from any theoretical or superficial observation, but to the contrary grow right out of the actual experiences of the production departments in the many lines of business surveyed. In response to the definite question as to the source of these desires for improvements, came the following answers:

Higher speeds required by present-day conditions
New packaging materials which the field is obliged to use as a result of shortages
New production requirements as imposed by emergency conditions
Imperfections in standard materials growing out of wartime difficulties
Difficulties attendant upon uncertain labor conditions.
Changes in marketing procedure
New standards of quality control

If proof were needed that there is intense interest in the subject matter of a questionnaire like this, it could be found in the voluntary remarks and comments made not in direct answer to any question but obviously "to get a load off the chest" of the one who filled out the blank. For instance, here are some observations that do not fit into any of the questions which were asked, but which very definitely are thought-provoking:

"Our greatest trouble in the future will be in selecting equipment that is really modern and not some 1941 stuff dolled up with a few new gadgets."

"We have not had to worry too much about new material—unless you consider the poorer quality as new. This poor quality will not be tolerated once the emergency is over."

An interesting sidelight on the mechanization of the packing industry was furnished by the following:

"As we conduct our operations, there is not a great demand for packaging machinery. In our case packaging is performed in many locations on a small scale, rather than in one location on a large scale. You can readily see that the need for packaging machinery, therefore, is very limited. However, if you classify mechanical aids, devices and fixtures which aid hand packaging as machinery, there is also a need for this type of equipment. As fast as these are developed and found useful, we use them. Low first cost makes such fixtures come within the possibility of small manufacturing units, whereas expensive automatic equipment cannot be justified by small volume. Thus the setup of the packing industry, even as it applies to the larger units, is not well understood. Frequently, suppliers waste a lot of time and money designing machinery and materials before they learn that even a big concern may be a collection of little units rather than one big operator."

A distilling company presents this interesting challenge:

"Produce a good argument to induce the Federal Revenue Department to permit revenue stamps to be lithographed on pilfer-proof or tamper-proof roll-on caps, permitting two operations to be combined. The Federal stamp should be lithographed around the cap in the plane of the cap threads so that it will not be necessary to 'spot index' the closure. The breaking of the cap seal by the consumer will effectively destroy the revenue stamp."

This is hardly a problem that can be solved by the machinery manufacturer, but its successful solution would be welcomed by more than one hard liquor distiller because it would make for more rapid and efficient production line operation. Subsequent savings could be passed on to the consumer without any revenue loss for the government.

Volumes of achievement are represented in the answers to the last question—"What have you been doing with respect to these new needs in order to 'get along' for the duration?" The experiences vary from that of the medical manufacturer in the happy and unusual position of being able to get all of the machines he needs to the toilet goods producer who said he had met the situation by "patching—welding—praying." Typical of most situations is this: "Much of our equipment is now quite old, and we have just kept it repaired pending ability to replace with new modern equipment."

"As is undoubtedly the case with other manufacturers," writes the production engineer of an internationally known concern, "we have had to resort (*Continued on page 154*)

Self-heating can

It's food and fire in one package

Thousands of British and American soldiers have made the acquaintance of a new type of self-heating food can which is a British development and so far has not been manufactured in this country. Several million of the cans, which require only the touch of a cigarette to set the integral heating element in operation, have, however, been manufactured in England for the American Army.

The necessary data have been released to the Russians to enable them to manufacture the cans for themselves. The H. J. Heinz Co., Ltd., and Imperial Chemical Industries, who developed the package, waived patent rights to permit this.

From a military standpoint, the new ration item is important because it permits the soldier in front lines to have hot food without lighting a telltale fire. Foods packed in the can so far have been liquids—soups such as oxtail, mock turtle, kidney, chicken, celery and green pea; beverages such as malted milk and cocoa. But there appears to be no reason why any type of canned food could not be so packed.

From a postwar standpoint, the can should find a market wherever food is to be consumed away from heating facilities. It should be popular with hunters, fishermen, motorists, yachtsmen and hikers.

If produced at a reasonable price, the can may also find a limited use in the home, owing to its extreme convenience where hot food is desired in a hurry without the trouble of using and dirtying cooking utensils.

In appearance, the self-heating can resembles an ordinary 16-oz. soup can, but underneath a metal disc in the center of the lid is a fuse enclosed in a metal tube running down the middle of the can. A soldier wanting hot soup has only to pierce two holes in the lid for the venting of steam, remove the disc and apply a match or a lighted cigarette to the fuse. In approximately four minutes his soup is piping hot.

The amount of food displaced by the heating tube is approximately 2 ounces, and the weight of the tube is 4 ounces. Thus the self-heating can when filled weighs 22 ounces as compared with the 18 ounces of an ordinary can.

The composition of the heating element is not disclosed, but it is understood to smolder rather than burn, thus giving off no flame and very little smoke. With the traditional ingenuity of the soldier in the fi ld for making himself comfortable, enterprising Tommies have been known in cold climates to tuck a can in each pocket as hot-water bottles.

The can is sturdily built and hermetically sealed. It will function even after it has been immersed in water.

The tube holding the heating element is made from metal tubing approximately 1 in. in diameter and 4 in. in length. The bottom end is sealed and the other is attached to the top end of the can, which has had a hole the same diameter as the tube punched in it. The food is placed in the can in the ordinary manner up to a level allowing for the displacement of the tube. The can top, with the heater attached, is then seamed onto the body of the filled can mechanically. The sealed container is then given the usual test for leaks.

The heating compound and fuse are placed in the open tube after the food compartment has been filled and sealed. Finally, a metal cap is pressed into the open end and sealed with a bitumin paste to protect the compound from moisture.

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PHOTOS, COURTESY BRITISH INFORMATION SERVICE

1—Self-heating can used by British has tubular heating element in center surrounded by food compartment. Cap is pried off tube, two holes punched in food compartment to vent steam. 2—Match or cigarette will light fuse. 3—There is no flame, little smoke. In four minutes soup is hot. For solid foods top is removed with can opener.

Macy's goes to Main Street

Some years ago, R. H. Macy & Co. set up its own plant in Long Island City to manufacture drugs, toiletries and cosmetics, and to package them under its own private brand. Fully 20% of the average 19,000 daily sales in Macy's drug department in New York are on Macy's own private brands.

Independent dealers, on the trail of quality products at prices to compete with the chains, began asking if they might have Macy products and Macy began selling to the independents in a limited way. Until recently, however, no aggressive merchandising plan had been set up to promote the line beyond Herald Square.

In the last year, Supremacy Products, Inc., a Macy subsidiary, has been set up for the purpose of distributing Macy's own items on a national scale through independent stores throughout the country. The name Supremacy for "super-Macy" was no accident.

Tom Johnston, one of the merchandise chiefs of the New York store, is vice-president of Supremacy with Jack I. Straus, president of the corporation as his chief. General sales manager for Supremacy Products is Daniel S. Shaffer, long time drug man and most recently a vice-president of International Vitamin Corp.

To start, there are about 60 different products in the line. Eventually there will be about 200, classified in five basic groups: drugs, toiletries and cosmetics, and a baby's and men's line of toiletries.

One of the first jobs—and a tough one—was the planning of a basic family packaging design for such a diversified line that could be modified for use on any size carton, bottle, jar, tube or canister. What Macy wanted was an overall trademark which would identify a Supremacy product at a glance and make the consumer remember it. It had to be equally adaptable to the ethical character of the drug products, the strong bold treatment of the men's line, the straight-forward appearance of a general toiletries line and the daintiness of women's and baby's cosmetics.

The trademark could not take up too much label space and had to have sufficient strength and character to be recognized even if it were reduced smaller than a dime. On the drug line, particularly, labels require considerable copy to comply with legal requirements.

Another consideration was clear legibility and display of the product name. This was essential in the drug group for quick identification by clerk and consumer because of the large number of products comprising the drug line.

Equally important as the selection of the trademark and design was the choosing of colors. Basic colors for all the packages had to be such that they would harmonize with each other for point-of-sale displays and other advertising and put over the name of Supremacy at a glance, yet at the same time provide a definitive color scheme for each group.

Initial requirements of the packaging problem were outlined by Miss Hildreth Lange, Macy's stylist, working in conjunction with Supremacy's advertising and promotion counsel, the Grey Advertising Agency, Inc. Then independent designers were asked to submit designs.

The basic design submitted by Koodin-Lapow Associates was chosen and this organization was commissioned to work out the numerous adaptations for the various groups of prod-

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ucts, the individual products in those groups and the diversified types of containers to be used in each group. The work started last December and after seven months of cooperation between Supremacy, the designers and material suppliers, the packages are now in production.

The trademark took the form of the Letter S, made with elongated swashes. Across the center is the word Supremacy. No matter how large or how small this "S" is scaled, it is quickly distinguished as the signature for Supremacy. It is as recognizable right-side up as it is upside down. It may be printed dark on light background, in reverse or in a panel. Any way it is applied, it is definitely Supremacy's letter S.

Another identifying trick that gives the packaging a distinguishing characteristic is the division of the surface into two equal panels, one of which is white on every one of the labels. The other panel is printed in the distinguishing background color for the group to which it belongs. On this paneled surface, the trademark is overprinted or set in a special shape.

Blue, red and gray in varying shades are the basic colors throughout, with the exception of the men's group which has just red and gray. For each group of products, the background panel, the treatment of the trademark and the color shades are modified to define the character of that group. For example, the drug line has a gray and white background with a maroon-red and blue overprint to suggest ethical products. The toiletries line is straight-forward and clean with a blue and white background, dark blue overprinting and the trademark in a strong reverse panel of red. The men's line has gray and white panels with the trademark and product name boldly overprinted in a reverse panel in strong brownish red. The cosmetic line has a delicate pink and white background with trademark and product name and decorative design printed in light blue and non-metallic gold. The baby's line has a delicate blue and white background with overprinting in a darker blue. The trademark is in a scalloped rectangular panel which the designer says is symbolic of a

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Colored labels were reproduced from Supremacy's own plates and with inks specified according to formulae. They illustrate each of five basic designs. **1**—*Baby's cosmetics.* **2**—*Women's cosmetics.* **3**—*Drugs.* **4**—*Men's toiletries.* **5**—*General toiletries.* **6**—*Representative items in general toiletries line. Note trademark in form of letter S and division of surface into two equal panels, one of which is white—identifying characteristics throughout the line.*

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***7**—Drug group with gray and white background, maroon and blue overprint, has clean medical look. Standard bottles are used except for Macy's own medicine chest bottle (center) made for space saving with recessed panels for easy gripping.*

baby's bib. The blue panel is accented with decorative stars.

A project that helped to assure accurate color reproduction of all labels and carton blanks on the initial and future runs was the close cooperation of all suppliers during the development and production of the Supremacy line. Engraver, printer, box maker and other suppliers have been supplied with a complete color guide for each of the five groups. These colors have been prepared according to special ink formulae for the actual label and container stocks by the Sigmund Ullman Co. in cooperation with Supremacy and the designers. The labels reproduced in color on these pages have been printed from the actual color plates used in printing the labels and the inks used to print them were supplied according to actual formula from the ink manufacturer.

All labels and cartons are varnished to heighten the color effect and to protect them from display wear and handling.

Gothic type faces were selected for use throughout all five groups—for legibility and adaptability in the small sizes—particularly on the drug line where large amounts of copy must be telescoped into very small space. The bold gothic was reserved for product names with light faces for subheads and informative copy. A sans-serif type for the body matter was also very feasible from a production standpoint because in plating the complete label or carton there was less danger of imperfections in the printing of small sizes than with slightly more elaborate serif type. Sans serif simplicity was an advantage for the copy printed over the color backgrounds.

Only one deviation was made from gothic type faces for the cosmetic line where a feminine, serif face was selected.

Further family recognition is provided by the printing of the trademark in slightly different treatment on the carton ends of all five groups. Inasmuch as the cartons are double-faced, the side panels containing directions and descriptions of the product were designed simply. Flat color is used on

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***8**—Cosmetic group has delicate pink and white background with trademark and product name printed in light blue. Nonmetallic gold is used for printing the decorative accents. Closures are to be in colors harmonizing with label colors.*

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9—Baby's group has a light blue and white background. The trademark is presented in a scalloped rectangular panel which the designer says is symbolic of a baby's bib. Background panel is accented with tiny stars in overall pattern.

both of the side panels with one color overprint so as not to detract from the front and back.

Plans are made for all closures to be in colors harmonizing with the colors of the labels and cartons, when such materials are again available. Supremacy has adopted standard bottles and jars for all the products with the exception of Macy's own medicine chest bottle for some of the drug and toiletries items. This is an especially designed flat-sided bottle designed as a space-saver and with recessed panels for easy gripping. Supremacy products are approved in accordance with the policies of Macy's Bureau of Standards and are developed in Macy's Long Island City laboratories.

The line of Supremacy products is being offered to independent druggists under a franchise system whereby one drug store in each shopping center or neighborhood will be selected to handle the line exclusively. In large cities, this will, of course, mean more than one store, but in smaller towns only one store will be selected to carry the supremacy products.

Each druggist handling the line receives a complete merchandising program, containing advertising and selling ideas taken from Macy's experience. This "Engineered Merchandising" material, prepared under the direction of the company's advertising agency, will include suggestions for monthly merchandise promotions, counter groupings, display cards, price signs, selling tricks and other helpful sales equipment. There will also be guiding information on such matters as stock arrangement and sales training.

This whole venture is one that will be watched intently by the entire drug and toiletries industries—and is one that may well set the pace for a whole new pattern of merchandising.

Credit: Glass, Owens-Illinois Glass Co., Toledo, Ohio and Hazel-Atlas Glass Co., Wheeling, West Va. Cartons, Wilkata Folding Box Co., Kearny, N. J. Labels, Borough Press, New York City.

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10—The men's line is effective in just two colors—gray for background panel and reverse printing in brownish red for trademark and product name. Note use of gothic type faces, which have been used throughout, except for women's cosmetics.

. . . a factor in post-war packaging

*by K. N. Merritt**

Proper packaging of commodities for movement by air in the postwar period would seem to be a subject that permits of limitless interpretations by packaging experts, shippers and transportation men. Wartime urgency has enabled the package manufacturer to develop many new types of containers, some of which will vanish from the scene with the coming of peace, while others, having literally proved themselves under fire, will have a prominent place in the list of postwar packaging materials.

The dramatic success of the Army and Navy air transport services in moving tons of material to world-wide battlefronts and strategic theaters of war has captured the imagination of the American public. It has given aviation enthusiasts the verbal springboard for a bewildering series of statements predicting how air transport in the coming air age will revolutionize long-established distribution methods of business and industry. For example, these postwar prophets see strange and exotic fruits being flown from distant lands to the American breakfast and dinner table; the quick-freezing of foodstuffs in transit by flying them through the substratosphere; the flight of out-of-season fruits and vegetables in a matter of hours from the producing fields to the consumer's table. These and many equally fascinating predictions are being made freely, without too much consideration for the probable postwar costs involved.

Nevertheless, there is no denying that air cargo and packaging for air cargo will be very large postwar factors, judging from a conservative view of the number of products that will benefit from this fastest of all means of transportation—and taking into consideration also the greatly enlarged facilities for specialized low-cost handling of cargo.

Perishable foods of the standard, rather than exotic, type will, for instance, be a very large and continuous air cargo item—just how large depending to some extent on the trend of rates. Special packaging for them must be considered. But beyond that, the manufacturer or producer who contemplates that his products may be shipped even occasionally by air will want to have a standard package that is suitable for this as well as other means of transportation and merchandising.

It is impossible to say definitely now just what postwar air cargo rates will be, and the opinions of some of the airline men and plane manufacturers have not crystallized on the topic.

The packaging problems connected with the movement of commodities after victory will furnish many a provocative article for MODERN PACKAGING. Granted that air transport costs and air cargo rates do permit of volume movement of many commodities, it is evident that as the result of experience gained in meeting Government packaging specifications during the past two years, package manufacturers already have laid the groundwork for new, lightweight, temperature-proof and sufficiently strong containers for use by air cargo shippers.

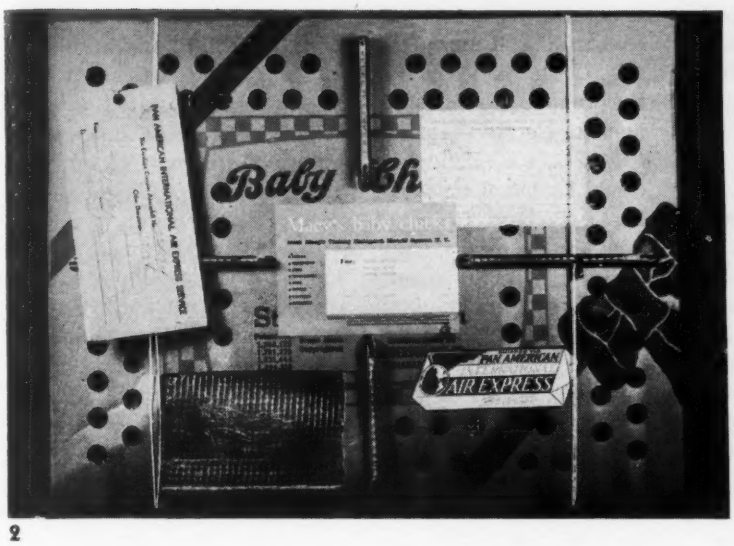
That this is an extremely live subject right now is indicated by the attendance at the recent first National Air Cargo Packaging Forum, sponsored in New York by the New York Board of Trade. More than 500 representatives of packagers, package manufacturers, airlines and other shipping interests were there, coming from 19 states, and the forum panel was so bombarded with questions about packaging considerations that it was unable to answer all inquiries during the meeting.

For the ancient counterpart of today's packaging problems, the story of the Caliph of Cairo may serve as an illustration. The Caliph, it is related, loved to feast on luscious cherries

***1**—Easter lillies from Bermuda, rare cut flowers from Latin America were prewar air cargo. Corrugated carton gives protection and is light weight; current research will provide better preservative wrappings in the future.*

PHOTOS 1 TO 5. COURTESY PAN AMERICAN AIRWAYS. 1

*General Manager of Public Relations, Railway Express Agency, Inc.



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2—Baby chicks move in ventilated corrugated containers with "bumpers" to prevent closing of air holes.
3—Two air express items are radio transcriptions and radio transmitting tubes. Tubes are in small crate suspended by springs inside large crate. Transcriptions go in corrugated containers with separators.

which were air-conditioned by nature in a 400-mile flight from an inland orchard, attached in tiny silk bags to the legs of homing pigeons. Thus was air express traditionally started.

Hundreds of years later, the colorful stagecoach drivers were to pose a packaging problem for their children's children. These intrepid messengers used their top hats as package containers. It is told of Benjamin P. Cheney, an early express official, that he attributed the baldness that came upon him in middle age to the constant friction of small articles stored in his hat as he swayed from side to side on the box of his coach over rough Western trails.

In an attempt to solve present and postwar air packaging and transport problems, several of the nation's commercial airlines are experimenting with test shipments of commodities in non-priority air express service. Commodities now being flown under test conditions include various perishable fruits and vegetables, baby chicks and hatching eggs, and California lettuce.

Baby chicks have not been flown extensively in domestic air service heretofore, although a considerable amount of this traffic—estimated recently at 8,000 chicks weekly—has been handled in international air express service to Latin American cities. In a recent experimental flight, 100 day-old baby chicks and 12 dozen hatching eggs were air-expressed from Chicago to San Francisco and return, a total of 56 hours in transit, including several hours' layover at the West Coast stop. During this round trip only one chick died. And the eggs which were hatched showed no ill effects, according to Prof. H. H. Alp of the University of Illinois College of Agriculture, who supervised the tests.

Recording instruments accompanied the shipments. Standard chick boxes divided into four compartments were used, with 25 chicks to a compartment. Readings of the instruments showed that temperatures inside the box ranged from a low of 36 deg. F. to a high of 92 deg., while temperatures outside the box ranged from 30 to 72. Altitudes ranged from 5,000 to 12,000 ft.

"The difficulty with shipping chicks has been chiefly the fact that 72 hours is about the maximum time in which they can go without food and they preferably should be fed within 36 hours after hatching," Prof. Alp said. "If our studies continue to show the same satisfactory results, we definitely can count on shipments of baby chicks and hatching eggs in the postwar period."

Another example of an unusual air shipment made recently was the movement of a half-million fertilized fish eggs, a gift of the United States to the Peruvian government, which were flown by air express from Chicago to Arequipa, Peru, a distance of over 4,000 miles. The eggs, delivered within four days, consisted of whitefish roe from Ohio and thousands of lake trout fish eggs from Michigan. Packed in ice in 60-lb. containers, they were flown from Chicago to Miami, transferred to international air express service for the flight through South American tropical temperatures. The fish eggs were used to stock Lake Titicaca, the highest navigable lake in the world.

A most important feature of all these experiments from a packaging standpoint is the temperature and altitude tests being undertaken in connection with these shipments. According to J. Prescott Blount, well-known air cargo official, efficient packaging methods will have to be developed so that perishables can stand up under varying temperatures and varying air pressures. This specification would seem to call for a transparent packaging material which, while protecting various types of fruits and vegetables from adverse temperatures and altitudes, would also serve to display the freshness and crispness of airborne fruits and vegetables to the retailer and the consumers.

In keeping with the present trend, it is presumed that fruits and vegetables for movement by air will be packed in single-unit consumer packages, these consumer units to be packed in larger containers.

One of the most significant conclusions reached in recent test movements of fresh strawberries and tomatoes from Florida to Detroit concerned the savings possible in the adoption of special containers. Standard wooden con-

tainers which have been more or less necessary in rail and truck shipment were used and it was found that the cost of transporting tomatoes was about 8 cents per retail pound box by air, as against 2.1 cents by truck or rail. In the case of strawberries, air shipment in standard wooden boxes cost 11.3 cents per retail quart box, in comparison with 4.9 cents by truck and 4.7 cents by rail.

In the opinion of one well-known commission merchant, three requirements are essential to the proper protection of fruit and vegetable shipments by air. First, the consumer package must be designed and constructed to allow for compact packing, despite varied sizes of the items, so that movement within the individual package is eliminated. Second, it must have extended edges or some similar feature to permit distribution of weight and so give needed protection to bottom packages. Third, the small package must be protected from other cargo by being packed in strong containers.

Proper identification, provided by means of a brand or trademark, is another important factor for the air package, he believes. This trademark can furnish the basis for effective advertising and sales promotion, inasmuch as it will enable the consumer to identify the product at the point of sale. The label could well call attention to the fact that the product was delivered fresh—by air cargo. It also should indicate clearly the quality of the contents. The degree of freshness, too, could be shown, since freshness of contents would be one of the strongest sales appeals of air-borne produce. Perhaps dating the package on the day of packing would be the means, this expert suggests.

A further requirement is that the package allow for convenient inspection of the product by customers with a minimum of handling—such as through a transparent window.

Buying habits, price and cost are major considerations in packaging for air cargo. In connection with buying habits, the size or quantity of the contents and the retail price to be charged are important.

Doubtless the size of the package will have to be determined by the amounts of fruit and vegetables which an average family ordinarily buys at a single purchase; also the amounts will have to be priced in a range which buyers are accustomed to pay for a single purchase. The average purchase of fruits and vegetables in New York, for instance, will average about 25 cents to 30 cents—so the air cargo single package items should be no higher than 40 cents to 50 cents, in this expert's opinion. While this maximum is considered a liberal one, it can be assumed that, at least during the marketing development period, air-borne fruits and vegetables would be bought principally by those in the higher income groups.

Speaking a word for the ultimate consumer, a prominent home economics writer voices the hope that the container industry will come forward with containers for home refrigeration—a package that will be easy to open and that can be closed again and returned to the refrigerator. And the lettering which gives the cooking or serving directions should be large enough to be read easily, she says.

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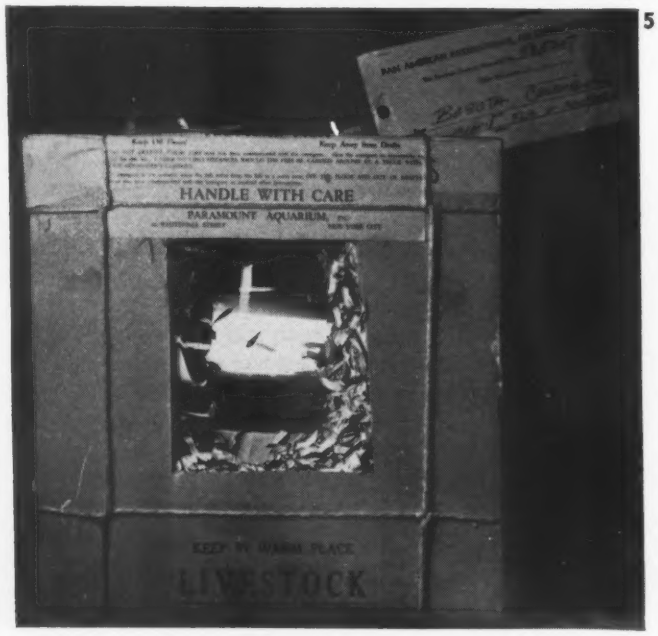

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4—Shipped through Lisbon, wooden container for Swiss watch parts has lining of tin as moisture barrier. **5**—*Tropical fish, electric eels and frogs are regular air travelers from South America. Cutaway shows inner packing of shredded paper around jar. Note caution and instruction labels.* **6**—*Drug bottles are separated and enclosed by corrugated, cushioned by excelsior on all sides and packed in a double-wall outer carton, steel-banded.*

PHOTOS 6, 9, 10 AND 11 COURTESY MANHATTAN STORAGE & WAREHOUSE CO.

6

This food counselor also asserts that fish should be an air cargo "natural" in the postwar world. One of the reasons so little fish is consumed is because it is difficult to obtain in many sections of the country.

From an airline point of view, in the opinion of M. D. Miller, vice-president of American Airlines, the air transport industry anticipates that one of its major traffic potentials is in the field of perishable products. Already considerable research has been done along those lines by independent agencies, he reports, with the fruit and vegetable growers and marketing organizations visualizing the benefits they can secure through the use of air transportation.

"From an operator's standpoint," says Mr. Miller, "we have been anxious to find out whether that traffic will require artificial refrigeration equipment built into the plane. Preliminary research indicates that this will not be necessary and that pre-cooling of bulk loads and the use of insulated containers and of insulating blankets will make it possible to protect this type of cargo adequately without adding the weight penalty of built-in refrigerating units. Our studies have indicated we will be able to control temperature ranges on the interior of the plane to a far better extent than temperature is controlled in motor freight operation, where a vast bulk of the perishable commodities is being transported today."

In this connection, expectations of sub-stratosphere flight are beginning to bring forth various package-testing methods, designed to simulate sub-stratosphere conditions. One such device was demonstrated recently by the Aluminum Co. of America's packaging laboratories. This equipment includes a jar which is an adaptation of the ordinary laboratory desiccator. It operates by vacuum and the readings can be translated directly into feet of altitude.

The package to be tested is placed under water in the bottom of the jar. As the vacuum is increased, the air within the package expands, creating pressure which seeks out any weak spot in the bag or seal. Pinholes are immediately detected through telltale bubbles. When the process is reversed and pressure applied (corresponding to conditions in a descending plane) the package shrinks. Any moisture penetrating the inner portion of the bag is immediately detected by the Drierite powder inside the bag, which turns from blue to red upon contact with moisture. In terms of altitude, the reduction of air pressure from 760 mm. of mercury to 100 mm. within the desiccator is equal to that in a plane ascending to a height of 47,156 ft. (8.9 miles).

The desiccator was used to demonstrate the practicability of heat-sealed packages developed for wartime and postwar service. Among the most successful of the packages tested were bags formed of .001 in. aluminum foil, coated with a thermoplastic lacquer, heat-sealed at 250 to 260 deg. F., which were unaffected by vacuum conditions approximating use in planes flying at an altitude of nearly nine miles.

Before the war there were several instances of containers styled specifically for air transportation. These containers, in addition to conforming to accepted packing standards,

PHOTOS 7 AND 12, COURTESY RAILWAY EXPRESS

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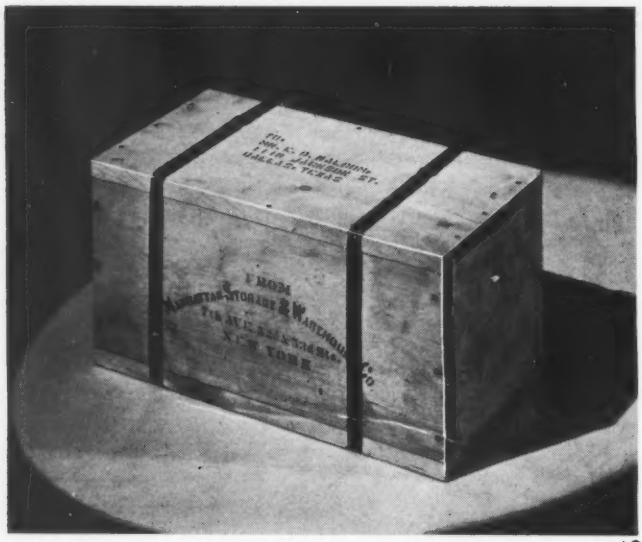
***7**—Striking examples of the use of air shipment for high-fashion merchandise were prewar shipments of millinery from New York to Atlanta, using special cartons marked with air insignia.* **8**—*On arrival, hat is displayed atop its container to show rush shipment. In advertising, store emphasized it was "scooping the town" on latest fashions.* **9**—*Burlap, sewn and steel-banded, makes an efficient package for products ranging from cloth to tools.*

9 PHOTO 8, COURTESY UNITED AIR LINES. HAT COURTESY HELENE GARNELL, N. Y.



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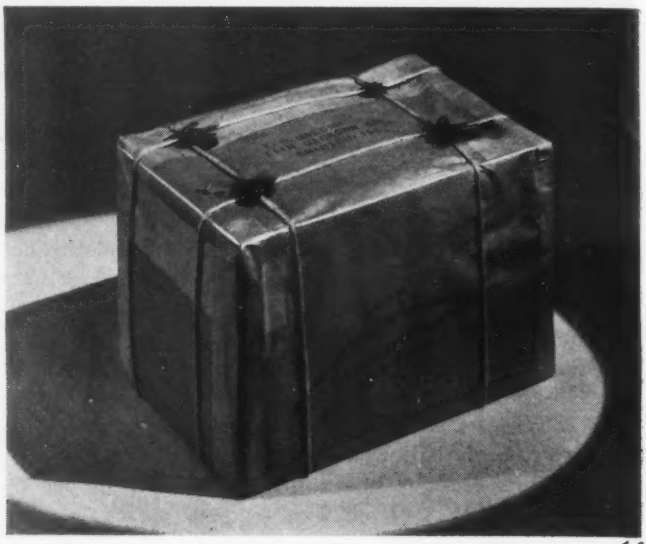

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10—Where combined air, rail or steamship movement is involved, strapped wooden box may be best for fragile articles. *11—Corrugated container is paper-wrapped and wax-sealed to protect valuable commodity.*

usually were marked, printed or labeled to show "Via Air Express" in distinctive letters and coloring, usually with a streamlined motif to convey the speed of air transport for the merchandising advantage which this conveyed. Upon arrival at destination, such containers often were displayed on sales counters and in show windows, thus indicating to customers that the merchandise had been received from the manufacturer or wholesaler within a matter of hours by air express, and consequently was "first on the market."

One example of this type of container was that adopted by a New York millinery house, which utilized a red, white and blue box with appropriate "Via Air Express" markings.

Just prior to Pearl Harbor, experiments with a new type of container for shipping women's dresses on hangers were in progress. If dresses could be flown to retail stores in this manner, instead of being folded and boxed, with resultant creases and wrinkles, a saving in time and labor could be effected at destination. Ordinarily, it is necessary for stores receiving a consignment of frocks to have the garments repressed before displaying them for sale. Transported on hangers, they can arrive at their destination uncreased and ready for instant display and sale.

Packing and storage warehouse concerns are going to be active in the air cargo packaging picture in the postwar era, giving custom packaging service. One well-known New York packing and storage house has created a special division for air cargo packing and distribution, and promises to provide "your air shipment with scientifically correct packaging to insure lightness, strength and weather resistance."

It defines its role in the air cargo picture as "a connecting link between the distributor and the customer." A Far Western manufacturer, for instance, can store his products in this New York warehouse, and fill domestic and international orders by air express, as needed. The storage concern will pack and dispatch shipments as requested. This service, the concern believes, will make for efficient distribution and speedy deliveries.

Obviously, considerable thought must be given to the weight and nature of the shipping container used for air cargo. The war has developed many strikingly new container materials. So-called "weatherproof" or V-board corrugated and solid fibre boxes, lighter than wood, will withstand prolonged contact with water without disintegrating. New wax treatments have resulted in paperboard packages that are already being successfully used for carrying fresh fish surrounded with water ice in place of the former tin boxes. Other familiar examples of this new development are the Ration K boxes, the various dehydrated food packages, the small arms ammunition container, cylindrical paper shell tubes and many other lightweight paperboard packages developed under the high pressure of military requirements to reduce weight and substitute paperboard for critical wood and metal. Many of these new developments undoubtedly will remain after the war and be adapted to civilian air-cargo requirements.

It is important to remember, however, that in addition to light weight, the container must be strong, rigid and have adequate cushion protection against outside shocks and impacts. It should also have a surface which permits it to be handled without fear of nails or splinters. Other air-cargo require-

14—War-time development that will facilitate postwar loading is jack-knife power hoist on this G. M. truck.

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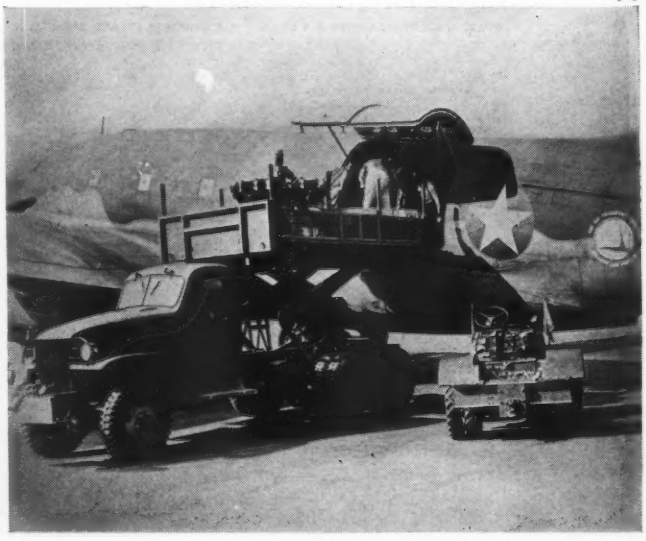

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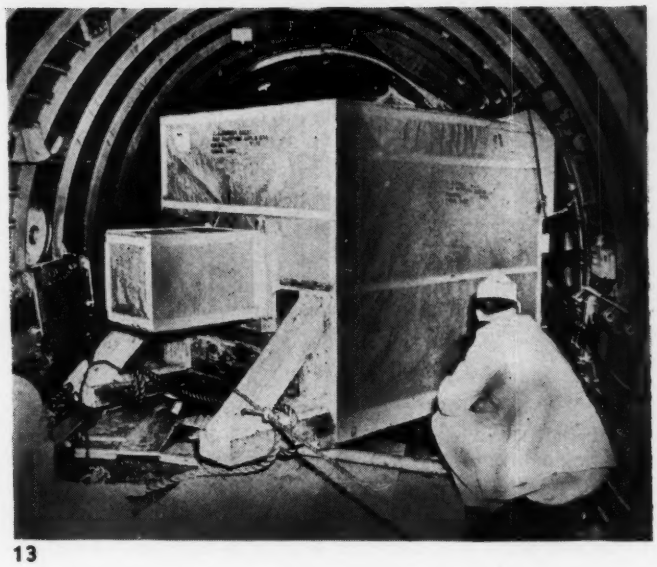

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12—*Rare, spiny ant eater from Australia was shipped by air from San Francisco to New York in straw in a ventilated wooden box.* **13**—*One of the heaviest items ever flown was this 10,000-lb. main turbine rotor.*

ments include low-cost insulation against heat and cold, ease of efficient sealing, ability to take multi-colored printing and minimum of bulk. The corrugated box is one answer to all these requirements.

For shipping small, odd-shaped items, a popular material is a tough, flexible corrugated which combines the protective qualities of corrugated board with the folding qualities of heavy kraft wrapping paper. It wraps and packs at the same time, resulting in a tailor-made package. The compact fit made possible with this material will often eliminate the use of oversize cartons, excelsior and shredded paper for inner packing, and thereby reduce air shipping costs to a minimum.

One definition of the ideal shipping container for air service would include among its properties light weight, adequate strength to retain and protect the contents, low cost, ease of packing, sealing and handling, rigid yet cushioned walls, a certain necessary amount of thermal insulation and nation-wide accessibility.

15—*Roller conveyors facilitate handling 1700 shipments a day through Railway Express Agency at La Guardia field.*

15

It seems to be human nature, comments one packaging authority, when bringing out a new product or considering a new method of transportation, to think of everything except the outer box. Time and again, he observes, his industry has been called in at the last minute to do a rush job of container designing. "Usually a much better job could have been done if we had been consulted earlier in the game," he said, "because we could have suggested changes in the design of the contents or in the method of handling that would have added a great deal to the all-around efficiency of the package."

Present air shipments, as is well known, are limited by plane capacity, size of plane doorways and cargo hatches, and weight of shipments. However, when larger transport planes such as the DC-4, which many of the commercial airlines have announced as their first postwar model, become available to commercial traffic, a very different set of operating conditions will prevail. Presumably, plane equipment will be unlimited, cargo capacity vastly increased, doorways and loading hatches considerably larger, and rates will be lower than present-day levels.

A preview of postwar air express and air cargo volume may be observed in the exclusive all-cargo flights operated by the nation's commercial airlines during the past 12 months. With a capacity of 6,000 lbs. of mail and express, converted DC-3's are being operated daily on long-haul, exclusive mail and express flights between the principal cities of the United States. The first such all-cargo flight was established in June, 1942, between New York and Miami. In 1943 and 1944, additional all-cargo routes were inaugurated between New York and San Francisco, New York and Los Angeles, Chicago and San Francisco, and Chicago and Miami. In addition to being handled on these flights, of course, air express continues to be flown on all regular passenger schedules.

As wartime air express increased, new and improved methods of loading and unloading cargo were adopted, so that flight schedules could be maintained and delays avoided. Consequently, many airlines installed various types of mechanical loading equipment, such as high-lift industrial trucks, power-driven belt conveyors to the nose compartment of the plane and unloading chutes. These devices, it may be assumed, are only primary developments in the science of

loading and unloading quickly and efficiently. Unquestionably, ever more advanced equipment will come as the result of the experience gained both in commercial and military air cargo operation.

"Each pound saved on a plane increases earning capacity by $100 a year," the chief engineer of one of America's leading airlines said recently. Extending his observations, he might well have added that each pound saved by a shipper in packing his product for air express will save him considerable in shipping charges, enable him to be more certain of cargo space when needed, and help to conserve all-important plane shipping space.

The essential differences between water and air shipping, insofar as space and weight-carrying ability are concerned, were discussed at the air packaging forum by a well-known shipping man.

A steamship, he noted, has ample weight-carrying ability, and can be generous with weight when determining its charges to the shipper. It is, however, limited as to space. In many cases, steamships make their tariff charges on the basis of space displacement of a shipment.

With the airplane, it is the weight-lifting ability that is limited. Airplanes often leave only partly filled with regard to space, but completely loaded with regard to their weight-lifting ability.

With the steamship, then, it is the space displacement of the shipment; with the airplane, it is the weight that determines the fundamental charge to the shipper. In addition, the air carrier has to base his charge not only on the weight, but the distance that this particular weight is going to be carried.

The gross weight of the shipment including the weight of the container, multiplied by the number of miles, determines in a major way, the air transport charge. Obviously, it is most important for the shipper to seek ways in which the weight of the container may be reduced without causing any damage to the merchandise packed therein for air transport.

Insofar as packing lightly to save shipping charges is concerned, a note of moderation is sounded by the Railway Express Agency, with particular reference to present-day handling of air express. It should be remembered that approximately 30% of all air express is handled part way by rail, thereby incurring one or more transfers and consequent handlings enroute. Therefore, while excessive packing is not necessary, it cannot be emphasized too strongly that shippers should not reduce packing to the point where it may become a liability to both shipper and carrier to handle the package.

A traffic executive of an international air line stated recently that he believed shippers can economize in packing when shipping by air to foreign countries, in comparison to the general heavy packing recognized as necessary for ocean shipping, but, he cautioned, ordinary common sense must be displayed. The containers used must be of sufficient strength and durability to withstand the many handlings the shipment must undergo according to the entire transit involved. That will depend on whether it is a simple and complete movement by air, or whether several carriers, air and other types of transport, will take part in the through movement. Shippers should also consider the weight and nature of the contents before deciding on the type of container to be used for international air express forwarding, he declared.

Citing one of the many traffic problems confronting an international air line, this man told of a recent instance in which a shipper forwarded a large wooden case of ladies' hats. This shipper instructed the air line to open the case at the international airport, take out the hats, which were in paper bags, and load them into the plane; then fly them to the foreign destination and there deliver them to the Custom House. Such a procedure would have saved the shipper not only in the charges on the weight or measurement of the wooden case, but also in customs duties, as in that particular country of destination customs duties are assessed on the gross weight of the shipment, plus certain (*Continued on page 146*)

16

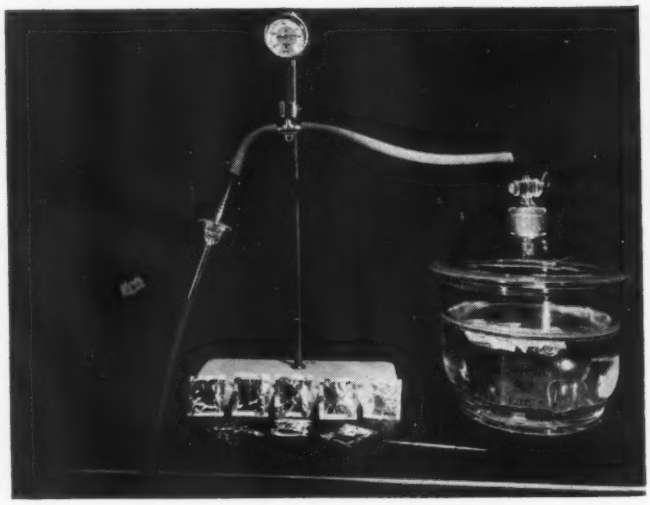
ALTITUDE EQUIVALENTS of MILLIMETERS OF MERCURY PRESSURE SHOWN ON GAUGE

Millimeters of Mercury Pressure	Altitude in Feet	Altitude in Miles
20 MM	80,854	15.3
40 MM	66,341	12.5
60 MM	57,852	10.9
80 MM	51,828	9.8
100 MM	47,156	8.9
150 MM	38,666	7.3
200 MM	32,610	6.1
250 MM	27,719	5.2
300 MM	23,566	4.4
350 MM	20,941	3.9
400 MM	16,713	3.1
500 MM	11,132	2.1
600 MM	6,394	1.2
700 MM	2,257	.4
710 MM	1,870	.3
715 MM	1,679	.3
760 MM	On earth - sea level.	

BASED ON U. S. STANDARD ATMOSPHERE

16 and 17—Aluminum Co. of America devised adaptation of laboratory dessicator (below) for testing foil packets under high-altitude conditions. Vacuum readings are translated into feet of altitude. Increase and decrease of vacuum simulate ascension and landing of plane. Table (left) gives altitude equivalents of mercury pressure.

17



1

2

1—Operator positions export carton of bottled beer under automatic sawdust hopper. 2—Sawdust-filled carton moves away from hopper on automatic vibrating table which oscillates to distribute and pack sawdust.

Export pack for bottled beer

Bottled beer now goes to American troops overseas, in all parts of the world, in a specially developed pack devised by packaging and packing experts in the Packing and Crating Section, Office of the Quartermaster General.

Canned beer is still a large factor in military supply. Some 200,000,000 cans were released for this purpose this year. But because beer from home is one of the finest military morale builders, the QMC did not want to be limited to those breweries which had canning facilities and sought to stimulate shipment of the lightweight, non-returnable bottle as well. The only question was a shipping pack which would adequately protect the bottle.

In developing the new-type pack, which utilizes sawdust both to insulate the bottles against shock and to absorb moisture, V3c outer boxes, with lighter weight partitions, pads and liners, were initially specified. This specification was so successful, and damage so negligible, that the OQMG packing men conceived, tested and subsequently adopted two new types of overseas fibre board, called "W5c" and "W6c," the use of which will accomplish a saving during the first 18 months of their use of around $1,000,000. Even more important, the adoption of these materials for the packing of beer will save some 12,000 tons of critical kraft paper which otherwise would have been used in the cases.

Twenty-four bottles are packed to the case, which is made of W5c corrugated board. Each box is re-inforced with a tight-fitting, full-height, corrugated inner liner of W6c board. Top and bottom pads, also of corrugated board, fit inside the liner to add extra cushioning for bottles and prevent sawdust leakage. After the bottles are placed in the box, each in its individual cell, all interstices are filled with sawdust. The box is then violently oscillated to insure compactness of the sawdust cushion around the bottles and filling is continued to the top, if necessary.

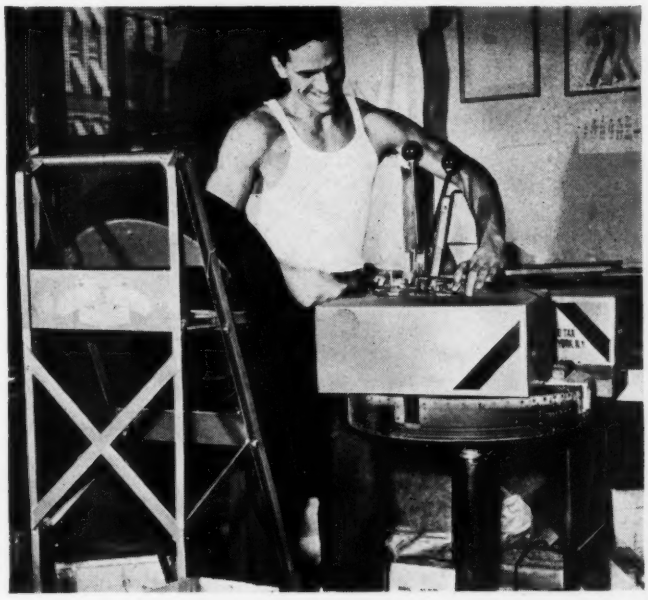
Extensive laboratory tests were conducted before this method was decided upon, some of the testing being done at the new Quartermaster laboratory at Cameron, Va. Identical boxes of bottles, with and without sawdust packing, were given tumbling and impact tests, and it was found that the sawdust pack increased the protection afforded the bottle by about 600%. In rare cases in which breakage did occur, the sawdust absorbed the beer without damage to the carton.

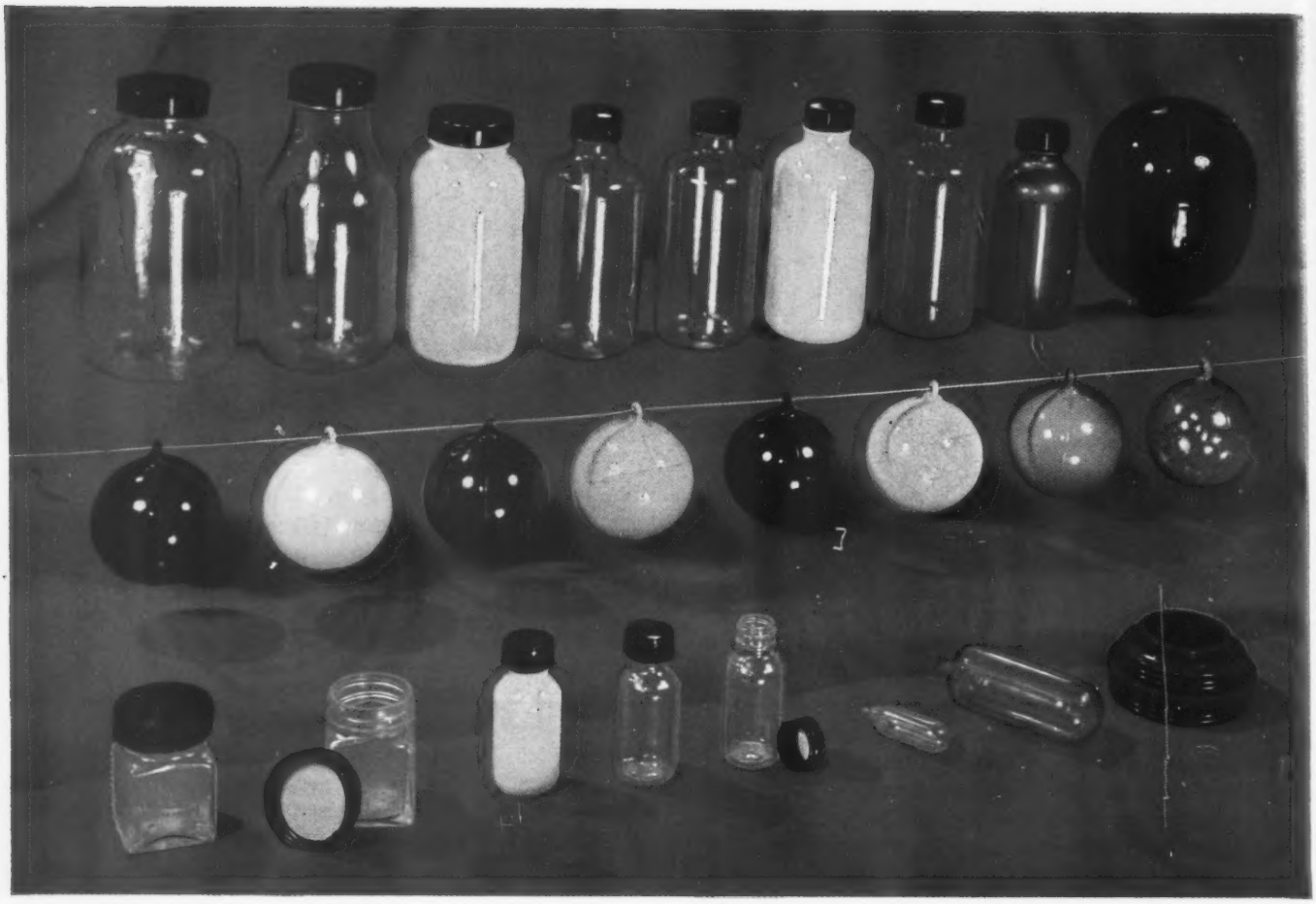
The sawdust packing also proved most efficient from the standpoint of cubic displacement per container, a factor which must be taken into consideration when shipping space is at a premium in ocean-going vessels, and when unloading facilities at foreign ports are not always equal to the herculean tasks they are asked to perform. The advantages of the sawdust pack are obtained with no increase in outside dimensions of the container.

Tests given the pack included the standard trials, such as the revolving drum test, corner drop test, impact test, etc. In addition, because it was known that the product contained in the cases must go overseas (*Continued on page 152*)

3—Revolving circular tables, with fittings to hold sealed cartons, facilitate the steel strapping operations.

3





1

Progress in plastic bottles

Last November, MODERN PACKAGING published a photograph of the first successful "blown" plastic bottle, made of polystyrene, with a summary of the methods by which it may be manufactured.

Since that time substantial progress has been made in methods of blowing and extruding such containers from various thermoplastic materials. The armed services have done much work in the development of plastic containers to meet medicinal and related needs. Drugs and vitamins have been shipped to all parts of the world by air in lightweight plastic containers of this type.

Present equipment, although limited in amount by the war, is capable of producing extruded and blown bottles from a variety of thermoplastics in sizes ranging from a minimum of $^3/_4$ in. in diameter by $1^1/_2$ in. in height to a maximum of $4^3/_4$ in. in diameter by $7^1/_2$ in. in height. Within these limits a tremendous number of variations from standard round or spherical containers may be obtained. The square bottle in Fig. 1 is an example.

New and much enlarged equipment of this type is planned for the postwar period to produce both larger and smaller items than can be blown and extruded today. Higher speed and greater quantity production, it is expected, will mean cheaper containers.

New automatic processes and apparatus based on the principle of extruded and blown thermoplastic materials are the result of seven years' experimental work on the part of one large New England company.

The company describes its machine for blowing hollow articles from plastic materials as follows: "It blows hollow articles from plastic materials by first forming a shape and then blowing this hollow shape or bubble in a mold. Molding powder is fed into a heating and extruding unit in which it is compacted and softened. The heat-softened plastic is given a tubular shape and extruded through the extrusion head or nozzle. The moment the extruded hollow shape or bubble is of the right size and shape, a mold is closed around it and fluid pressure admitted to the hollow shape to cause it to expand in the mold. A knife operates to sever the extruded and blown shape from the extrusion nozzle and the mold moves away from the nozzle. Another mold immediately moves into position in registry with the nozzle, ready to receive the next hollow shape or bubble which is extruded and formed. The molds travel to a delivery station where the blown articles are discharged."

The type of machine shown in Figs. 3 to 5 provides an interesting arrangement for severing the hollow shapes from the extruding head or nozzle. For this purpose, the heating and extruding unit is mounted on a pivot so that the discharge or nozzle end of the unit may be moved up and down. This up-and-down movement is utilized to project and retract a knife blade which performs the severing operation. The

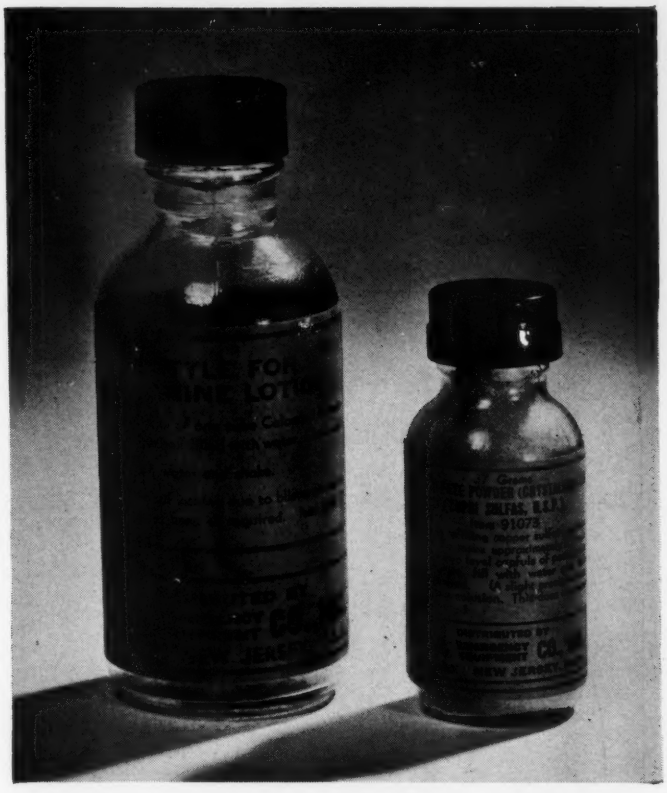
machine is adapted to a wide variety of sizes and shapes of molds for the production of various types of articles. It is capable of producing these articles from a large number of molding compounds. The method of operation requires special treatment of the molding compounds to prevent bubbles forming in the material as it is extruded. In some cases, special cooling of the articles is necessary to insure that they will retain the shape of the molds.

Fig. 3 is a side view of the blowing machine, showing its general construction. The rotating table mounting the four blow molds is at left center, while a special set-up for cooling the parts stands at the right. In this cooling unit, spray nozzles mounted directly above a moving belt serve to cool the articles as they are carried away from the delivery end of the machine. The heating and extruding section of the equipment is in the left background, parallel to the cooling chamber.

Fig. 4 is a close-up of the extrusion head and one split blow mold. This photograph shows the formation of a bubble for the production of a large bottle. The bubble, which has been extruded and blown to its present size and shape in the atmosphere, is about to be tightly enclosed in the mold. The blowing will then proceed until the bubble has taken the exact outside contour of the mold. Fitting smoothly at each point, the bubble is formed into a bottle, including even the perfect formation of the neck and outside threads.

After the cut-off operation has been completed, this mold with the blown bottle enclosed within it indexes to the second station. At this point a water connection is made automatically, and cooling water is forced through various channels in the mold to hasten the setting or hardening of the material. The details of this cooling vary widely according to the size and shape of the blown article. As a matter of fact, in some cases it is understood that no forced cooling is necessary. While indexing to the next station, the hinged mold opens

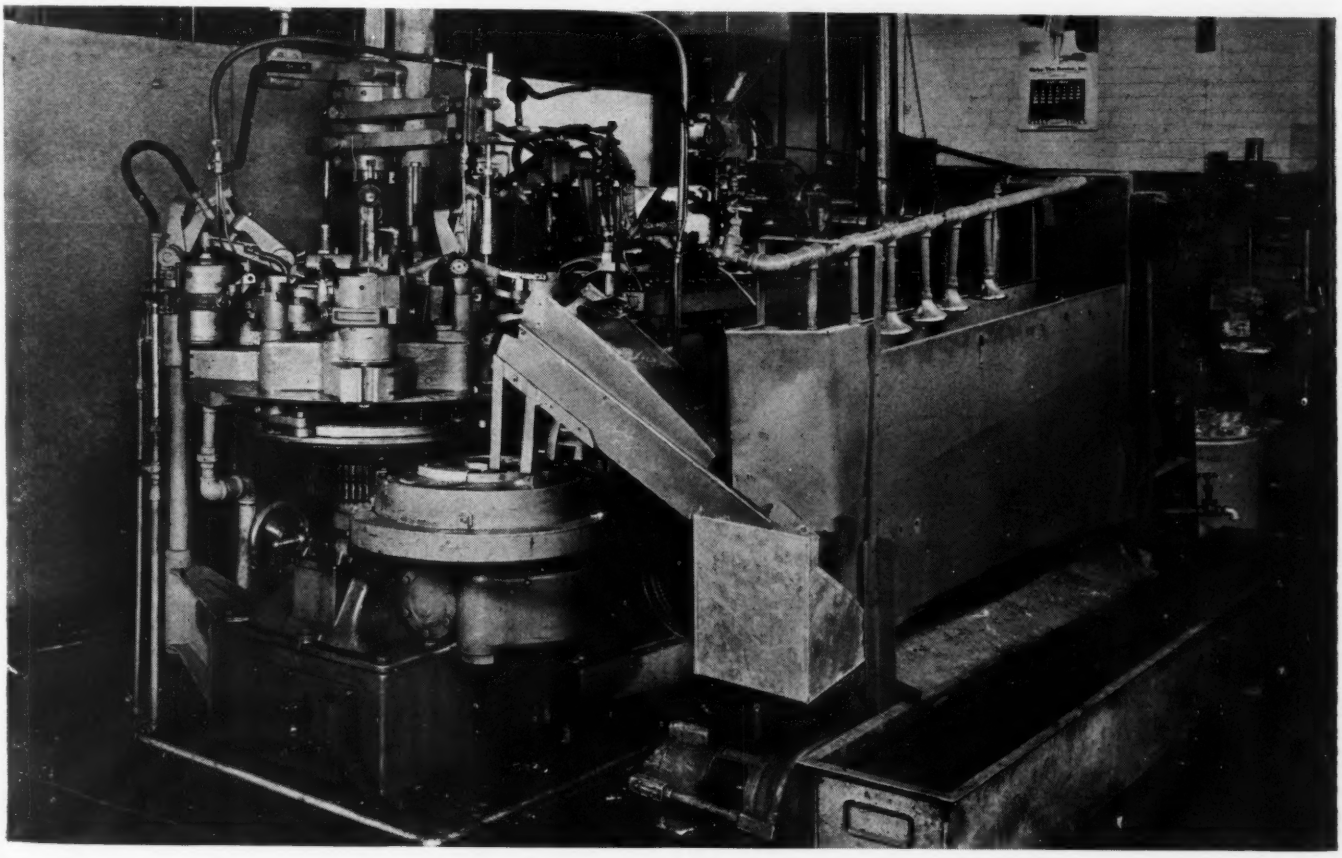
2

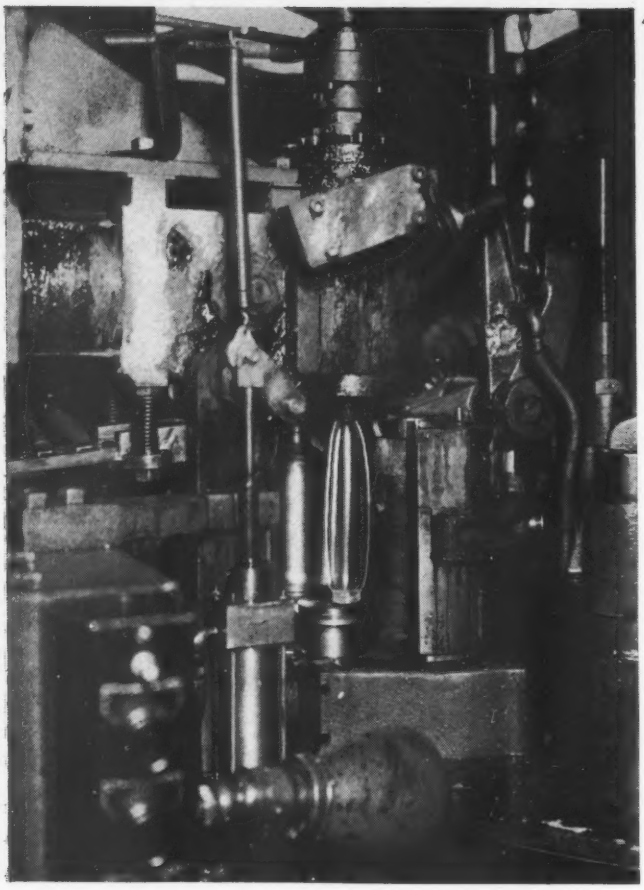


1—Representative sizes and shapes of extruded and blown thermoplastic bottles. Early commercial applications were Christmas tree balls, center. 2—Army Medical Dept. uses extruded and blown polystyrene bottles in gas casualty kit, packed by Davis Emergency Equipment Co., Newark, N. J.—1-oz. size for copper sulphate; 3½-oz. for mixing calamine lotion. 3—Side view of new machine developed for blowing plastic bottles.

3

PHOTOS 1,3,4,5 COURTESY PLAX CORP.





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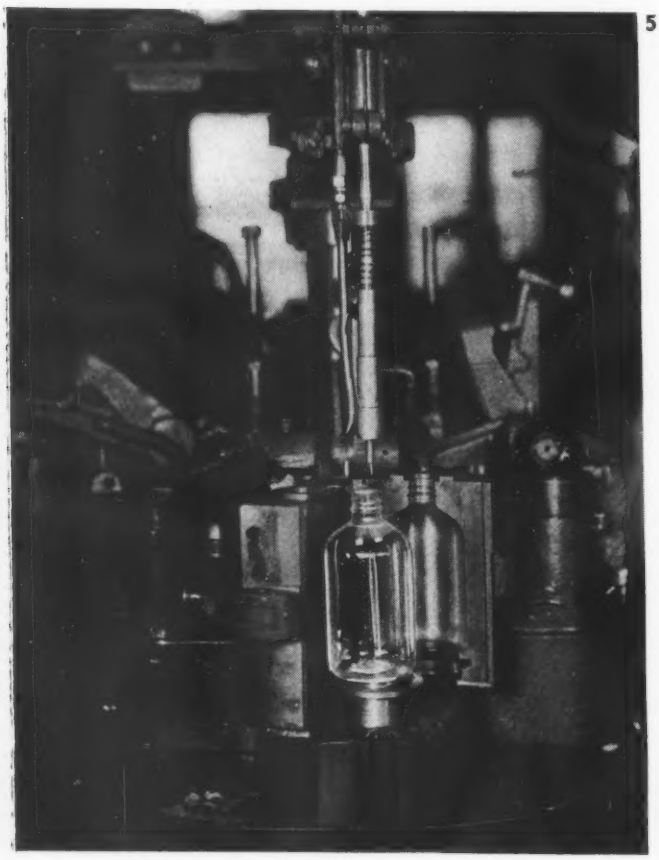

5

4—Close-up of extrusion head and the split blow mold shows the formation of a bubble for one of the large bottles. **5**—*A mold illustrated in the open position with the bottle suspended just below a vertical knock-out pin.*

so that, when it finally reaches the third stage in the operation, the bottle is held merely by the lower plug which formed its bottom surface.

Fig. 5 shows the mold in the open position with the bottle suspended just below a vertical knock-out pin. This pin breaks the bottle loose from the lower plug and starts it down the delivery chute shown in Fig. 3. Then the mold, still in the open position, proceeds back to Station 1, ready to receive another bubble.

Principles of the art of glass blowing are similar in some respects to the blowing of plastics, but the vast difference between the two materials made the technique and "know-how" of the former process inapplicable to the latter.

Celluloid, for example, has been blown for years by clamping two sheets of material between two split halves of the mold, softening it by heat and forcing it out against the mold with air pressure. However, this is not an automatic process and requires much hand labor and time. Several plastics companies have done a great deal of development work which involves injection molding a slug of material around a hollow core, then transferring core and slug to a so-called blowing mold in which they are tightly clamped. Air pressure of approximately 80 p.s.i. then stretches, forces and literally blows the softened plastic material out against the contours of the blowing mold. When the plastic canteen for the U. S. Army was in its experimental stage, its production was attempted along these lines. Due to many factors, the blown version of this item was never satisfactory, but there is no doubt that it could have been successfully produced if many discouraging circumstances had not intervened.

On the other hand, extruded and blown articles which the New England company has had in production for some years have worked out well. After the process was developed, various bottles were successfully produced, but difficulties were encountered in marketing them because the properties and cost of the plastics did not adequately meet the requirements for container uses. However, a ready market was found for Christmas tree balls which, because of the availability of cellulose acetate at that time, could be produced in very large quantities. Millions of the balls were sold, but such items had to be eliminated from production because of the strict allocation of thermoplastic materials. Toilet floats have also been produced in large quantities for use in place of copper floats in toilet tanks—replacing a more critical material during the period when Army camps were being built and defense housing was at its height.

The flexibility of the new equipment to handle different types of thermoplastic materials is another step forward. As is well known, no plastic is completely satisfactory for every purpose. Therefore, the right material must be selected for the product it is to house. For instance, the Navy found it advisable to use a styrene-type container as a replacement for glass. While styrene can be shattered, the effects of the shattering would be negligible if the fragments came in contact with officers and men. If moisture protection had not been an important factor in this particular application, the Navy would have used a cellulose acetate container because of its better strength characteristics.

When polystyrene is used as a container material, it suffers in comparison with cellulose acetate because of its brittleness. It has the advantages over cellulose acetate of better thermal stability and resistance to cold flow, much lower moisture absorption and hence higher volume stability. In addition polystyrene lacks the objectionable effects of a volatile plasticizer. Research and development in either forming processes or material composition, or (*Continued on page 144,*

Think through to point-of-sale

Marketing activities of late have been almost suspended, but people in these activities have not been idle. They have been studying the fast-changing scene, watching trends, recording marketing data, in readiness for tomorrow's needs. Here is a thoughtful article for those who are looking ahead toward re-establishing orderly postwar marketing procedure.

*by Abbott Kimball**

A good brand, well-advertised, well-packaged and well-displayed at point-of-sale can be trusted to sell itself.

That's important in these days when there is such a shortage of manpower and brainpower in the retail sales departments. When there are a dozen women crowding around every little clerk, thinking themselves lucky to pay their money and get their purchase wrapped, an easily identifiable package can be located by the customer and brought right to the clerk's hand. If it is designed so that she can say "You needn't wrap it," the selling transaction is still further simplified—not to mention the paper saving.

"Clerks sell more of an easily identified package, we find," a clever executive from Harzfeld's in Kansas City said to us recently. "If we have a package that's half blue and half pink, for instance, we find it always goes out faster."

Today, the manufacturer has to think his advertising and selling campaign right through to the final ring of the cash register. After all, the real objective in a race is the finish. The whole chain of manufacturing, designing, advertising and merchandising a product leads directly to that final crucial moment when madame at point-of-sale hesitates and either says "I'll take it," or "No, thanks."

It's right there that a maufacturer's whole campaign is lost or won. On what happens at point-of-sale depends the store's opinion of his products' salability, the amount of their re-order and the special featuring the retailer will do.

Nevertheless, few manufacturers think beyond the closing date of the magazines where their advertisements appear, and still fewer take trouble to study the store conditions under which their dealer helps (if any) will be displayed.

We have seen all too many dealer helps lying in unopened packages in the receiving warehouse, because they aren't suitable to the size of the counter or won't fit on the shelf above stock. We have seen all too many packages stacked on bottom shelves while handsomer packages that dress the department get position at eye-level. And since the girls have learned to do spot-welding, we have seen many a customer glad to take a simple nice-looking package off a stack topped with a sign "Take One—25¢," handy to the cashier's booth, and walk out with it unwrapped.

Thinking out these things is a part of wartime advertising and merchandising. It sounds simple and obvious, but you'd be surprised how often, in an advertising conference, the simple and obvious is overlooked.

Review your packaging today. Walk around in the stores and see what position you get on the shelf. Think what you can do to help out the clerk situation with automatic selling. Maybe you never did it before, but a lot of people are doing things they never did before.

All over the country, there's a trend among the stores towards featuring branded merchandise. This, in our judgment, is due to the fact that it takes less clerk-time to sell a known brand than an unknown brand; also that brands tend to maintain their standards of quality more than unbranded goods. Now is the time for branded merchandise to work its built-up reputation and good will as hard as it can for better display and larger volume at point-of-sale.

* President, Abbott Kimball Co., Inc., New York.

Branded merchandise should push its built-up good will for better display and larger volume at point-of-sale.

DESIGN

Jack-in-the-box

Nursery air refreshers in these jack-in-the-box packages make a game of the job of keeping the baby's room sweet smelling. These products, packaged by Jonthay, New York, contain perfume in fruit and candy scents dispensed by means of a wick.

The nursery refresher comes in two sizes. The smaller bottle is inside a folding carton decorated to look like a child's alphabet block. Standard metal closures are concealed with large wooden squares colored red and mounted with jig-saw animals. Retail outlets are offered five different animals on the closures, making a selection possible.

The larger size is packaged in a hinge-lidded wooden box reminiscent of a real jack-in-the-box. The bottle itself is concealed by means of a die-cut platform which fits over the neck. Animal heads fashioned of plaster of Paris pop up when the bottle is opened. The dispensing wick in this case is made with a stiffening material to hold the head up. The bovine head of Mrs. Millicent Moo is on the box shown in the background, while alternative heads directly in front are those of a dog, a wolf and a pig.

Although Jonthay is interested mainly in children's cosmetics they have added to the line a room perfumer for mother. The cap on this bottle is a plaster of Paris hand holding a goblet.

Credit: Boxes, Acme Folding Box Co., New York. Wooden closures, H. M. G. Wood Art, N. Y. Bottles, Hazel-Atlas Glass Co., Wheeling, W. Va. Plaster of Paris hand, Magnani Statuary Corp., N. Y. Plaster of Paris heads, American Art Novelty, Brooklyn, N. Y. Art Work, Alan Berni, N. Y.

Motion sickness preventive

After intensive research and months of tests, the Army Medical Department early this year approved a motion sickness preventive. This remedy is for distribution to armed forces as an aid in preventing seasickness and airsickness. After the war it should be a valuable aid to sea and air travelers. The medicine is produced in tablet form and is now being manufactured by Eli Lilly and Co.

These tablets had to be packaged in units that would be moistureproof, convenient for the soldier to carry in his pocket and open with one hand. The package also had to be one that could be produced by the millions for the Armed Forces within a few weeks' time.

Previously the Medical Department had packaged benzidrene tablets in continuous strips of seal-tape. The same type of package was selected as suitable for the motion sickness tablets, except that the heat-sealed strips, with a separate pocket for each tablet, were made of a black asphalt-impregnated kraft laminated to foil with an inside vinyl coating. A strip containing six tablets was then labeled in large silver printing, "Motion Sickness Preventive" to distinguish it from benzidrene and avoid any possible mistakes.

A strip made up of six tablets was folded into a tiny folding carton that could be slipped easily into a soldier's pocket. This can be opened with one hand.

Credit: Laminated kraft and foil, Reynolds Metals Co., Richmond, Va. Packet, created and produced by The Ivers-Lee Co., Newark, N. J. Carton, Package Paper Co., Indianapolis.

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HISTORIES

Gas capes in laminated packs

The Army supplies gas capes against blister gas. These capes are made of specially formulated cellophane. To keep the cellophane soft and flexible at low temperatures it was necessary to retain a relatively high moisture content in the cellophane itself. The Office of the Quartermaster General was confronted with developing a package which combined high moisture-vapor-proofness, waterproofness, and abrasion resistance with light weight and easy opening facilities.

The final answer proved to be a laminated combination of cellulose acetate film, aluminum foil and coated cloth. It consists of .00065 in. aluminum foil sandwiched between a .00088 in. cellulose acetate film and a coated cloth. To facilitate quick opening of the package, a coated tear-tape is adhered to the inner ply of the wrapper, extending beyond the seam about $1^1/_2$ in. A quick pull on the tape shears the wrapper in half and exposes the gas cape for instant donning.

The cape, of course, was thoroughly tested by the Chemical Warfare Service and many months of volume production indicate the Army's satisfaction with the package.

Credit: Aluminum foil, Aluminum Co. of America, Pittsburgh, Pa., and Reynolds Metals Co., Richmond, Va. Cellulose acetate, E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., and Celanese Celluloid Corp., New York. Coated lawn, Columbus Coated Fabrics Corp., Columbus, Ohio. Tear tape, Chicago Printed String Co., Chicago, Ill. Lamination, The Dobeckmun Co., Cleveland. Shellmar Products Co., Mt. Vernon, Ohio, & Arvey Corp., Jersey City.

Purse-size beauty

Cellulose acetate is used to make these purse-size cases which hold sticks of brushless mascara and touch-up crayon manufactured by Clairol, Inc. Both holders are identical in design—hinge-lidded in such a manner as to make a holder for applying the product. The side-opening cover swings down, the stick swivels to an upright position and then the cover snaps back into place making a rigid applicator.

Blue is used for the mascara case and it is decorated with a medallion of a darker blue embossed with a highly stylized eye to identify the stick within. The stick, formed with comb-like ridges, is used without a brush—simply dampened and applied to the lashes. A tiny eye-lash comb, held in place inside the cover by means of a metal spring arrangement, is included for further good grooming. The touch-up crayon, for covering gray hairs, is in a holder of gray acetate with the embossed circle in white. A design consisting of two heads, back to back, identifies this stick. No comb or brush is needed with the crayon because a brush is hidden inside the coloring material itself.

Both the brushless mascara and the touch-up crayon are outer wrapped in three-color, folding window cartons. The circular cut-out shows the medallion on the case within and, therefore, the product can be identified in any of three ways—by the descriptive type on the carton, by the color of the circle seen through the cut-out and by the embossed design.

Clairol merchandises these cases as re-use containers and reminds the user that refills are available in various colors.

Credit: Case, Bridgeport Molded Products, Inc., Bridgeport, Conn. Carton, U. S. Printing & Lithograph Co., Brooklyn, N. Y.

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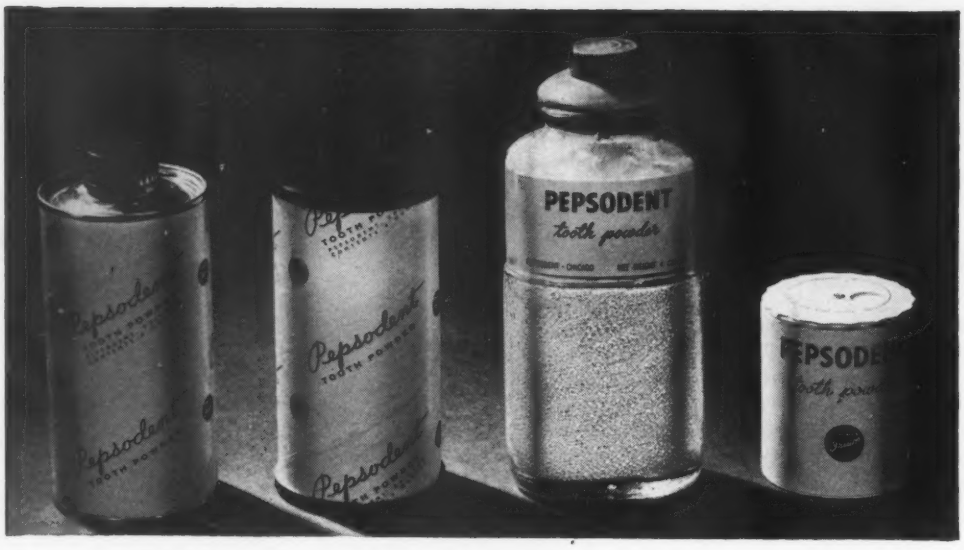

1—Four wartime substitute packages evolved for Pepsodent Tooth Powder. From left to right: metal-fibre combination, plastic-fibre combination, glass-cork-wood combination and all-paper.

Market reaction

It helped Pepsodent meet war problems with a variety of packaging substitutes

*by Charles Luckman**

The advice of our retail dealers, and in turn their willingness to give us tips on consumer reactions, has helped Pepsodent meet the problem of package changes due to war shortages with a minimum of difficulty.

In this connection, we must frankly confess to a certain amount of amazement at the attitude of some manufacturers who arbitrarily made serious package changes without ever consulting the retailer as to his resultant problems and the reactions he received from his customers. For Pepsodent, a job most difficult at best has been made less burdensome by the helpfulness and good will of the dealers.

Approximately twelve months before Pearl Harbor we started a program of substitute package development for tooth powder with two thoughts in mind. In the first place, the pattern that presented itself in Pepsodent's London plant indicated that substitute packages might be a necessity, in view of the fact that the typical conventional tinplate oval package might be denied to us as a result of anticipated steel shortages. In the second place, we anticipated a possible disruption in transportation and communications with the Far East, the source of our large supply of Straits tin.

We approached the problem first by developing interior lacquers that might permit the use of black iron plate and still afford satisfactory protection of the product in contact with a metal not adequately coated with tin. By August of 1941 we had perfected interior lacquers that would permit the use of black iron at no sacrifice in utility of the package, and without subjecting the contents to incompatibility with the metal.

There was, however, some sacrifice necessary in the decorative qualities of the package; that is, the outside coating and lithography.

With the advent of Pearl Harbor and the subsequent fall of the Malayan Peninsula, communications were entirely shut off and our prime source of supply for pure tin was completely eliminated.

We had some sense of security in the metal package that we had developed. Meanwhile, we had started to work on various types of paper substitutes, on the theory that all types of metal might become critical. In this group were represented probably 50 different combinations of the various types of laminates, including such items as aluminum foil, cellulose acetate, cellophane, parchments, glassines, etc. The biggest problem that this type of package presented was the high moisture-vapor transmission through the side wall of the container, as well as the wicking action of the paper itself, both of which had a tendency to permit rapid vaporization of the flavoring oils.

Shortly after Pearl Harbor, tin plate was denied to us out of the necessity that all tin be made available for the more direct war and military necessities. For a short period then, we were in black iron, interior lacquered.

Our work on the fibre package was immediately accelerated and we successfully developed a spirally wound cylindrical fibre container that went a long way towards the retention of flavoring oils and the locking out of atmospheric humidity. This package was a combination of fibre side walls with metal top and bottom. The metal top and bottom were made from tinplate cut out of the matrix scrap material resulting from manufacture of the circular end pieces for sanitary cans for foods. We actually got into production on this package in July, 1942, and some three weeks later received a stop order from the WPB because an interpretation of the WPB L-171 order defined dentifrices as cosmetics, and WPB Order M-126 denied the use of even scrap metal for use in packaging of cosmetics.

We processed an appeal with the WPB which was granted giving us sufficient of this scrap matrix material to continue production until we had developed a third substitute. Feeling that the future of packaging might become even more uncertain, we then proceeded to develop not just one but three substitute packages.

Our first job was to replace the metal tops and bottoms with plastic members. The plastic members were affixed to the cylindrical side walls or body of the cans through the

* President, Pepsodent Division of Lever Brothers Co.

use of an adhesive. This we were required to develop ourselves.

At this particular time, plastics generally were in critical condition so we felt that it was expedient to develop a glass container. Therefore we undertook, simultaneously, the development of a package which was a wide-mouthed glass bottle fitted with a closure made of cork and wood, with a smaller closure for the dispensing of the Peposdent powder in the hands of the consumer. The smaller closure was likewise made of cork and wood.

Lastly, we developed an all-paper package with the top and bottom members made of the same materials as the side walls. While this latter package was rather attractive, it lacked the utility of any of the other substitutes, and we produced and used relatively few.

When our appeal was processed for the use of the scrap metal in August, 1942, in the interest of stretching this metal as far as possible we used the same diameter package for our large size as we were using for our medium size. The net result of this was that our original large-size package was considered by a great number of consumers as being too tall for the medicine cabinet; but a more serious fault of the package was its high center of gravity, with the tendency to tip very easily. When we tooled, therefore, for the paper-plastic combination, we increased the diameter with consequent decrease in height, which gave us a much more attractive package, a better grip, and the requirement of less shelf space.

At one time, we were using three types of powder packages simultaneously, both in production and in distribution: metal-fibre combination, plastic-fibre combination, and the glass-cork-wood combination.

The glass package presented two or three serious objections, from the viewpoints of the consumer, retailer and the Armed Forces. The package was much bulkier, it was substantially heavier, and of course presented the obvious problem of breakage. As a partial solution, the glass package was distributed exclusively to our civilian trade, in the interest of conservation of weight, space and elimination of breakage for those packages going to the boys in the Armed Forces, both domestically and overseas. Approximately 28% of our total Pepsodent tooth powder volume at this particular time was going to the men of the Armed Services. This meant a segregation of stocks and presented warehousing and distribution problems—all of which were overcome, we believe, quite satisfactorily.

After several months, stock piles of the matrix scrap material started to accumulate, and so the WPB saw fit again to release this type of material for use in packages such as that used for our tooth powder. Meanwhile, plastic became even more critical, and we therefore reverted to the metal-fibre package.

During this two-year period, there have been many times when we were in difficulty as to supply of one or two of these different packages at the same time, but having three possible packages that we could use, we were able to maintain production schedules and not only meet the greatly increased demands of the Armed Services, but handle the civilian business as well.

We have had relatively few complaints, either dealer or consumer, and this we believe is due to the fact that we had experimented with these several packages in a very exhaustive manner and tried to anticipate the problems that the package would present. We made a canvass in retail drug outlets with actual users of these substitute packages to determine from them what difficulties (*Continued on page 148*)

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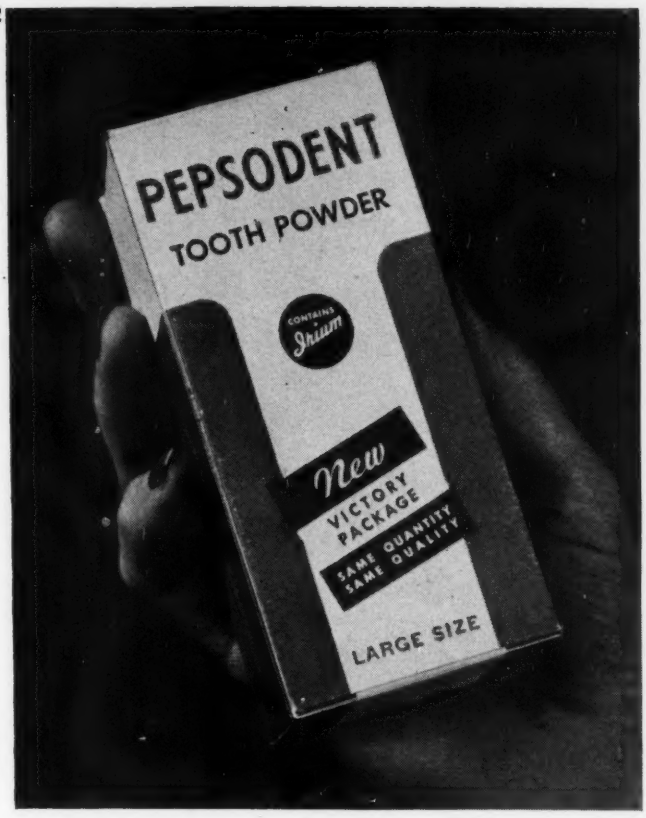

***2**—Consumer reaction to substitute containers is answered by addition of a notice "New—Victory Package—same quantity, same quality." **3**—Insert in the package tells the consumer that standard containers might not be available for the duration but—quality and quantity of the product are same as always. Circled is a note pointing out that the powder has settled in shipment but the weight is same as declared on label.*

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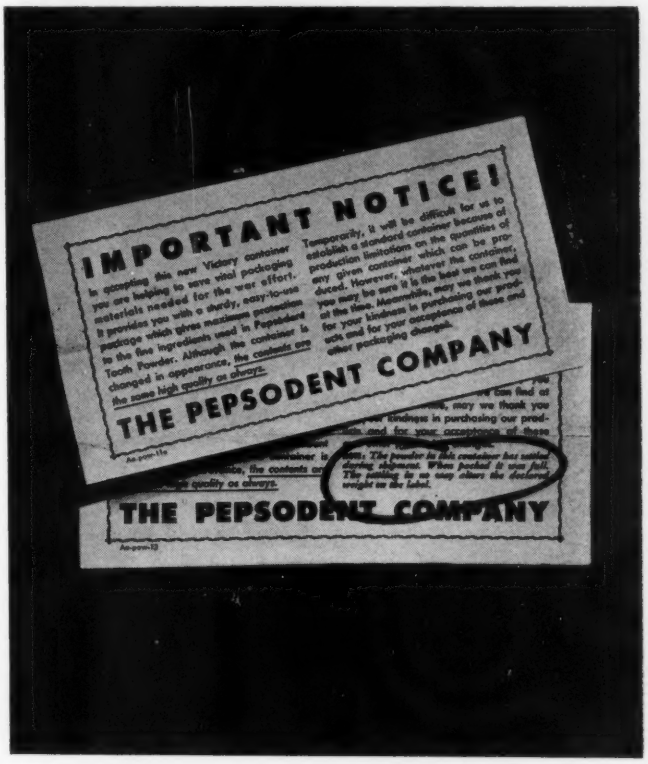

PACKAGING

1

1 One of the advantages claimed for KC baking powder packed in glass is that the housewife can now see the exact amount of powder she has on hand without opening the container. Also, it is said that once opened the metal cap gives a tight reseal which protects the contents against air circulation, moisture and loss of strength. Grocers report that the package adds sales appeal to his shelves. Container, Owens-Illinois Glass Co., Toledo, Ohio.

2

2 A new soapless washing powder and rinse for baby clothes and diapers is being retailed by Allen Sales Co., N. Y. The powder is packaged in a folding carton, tight-sealed and colored predominantly pink and blue to suggest its use for baby's clothes. One corner of the box is perforated to make a convenient dispenser. The product is packaged in two sizes and is shipped eight dozen to a case. A colorful counter display is included in each case. Box, International Folding Paper Box Co., Inc., North Bergen, N. J.

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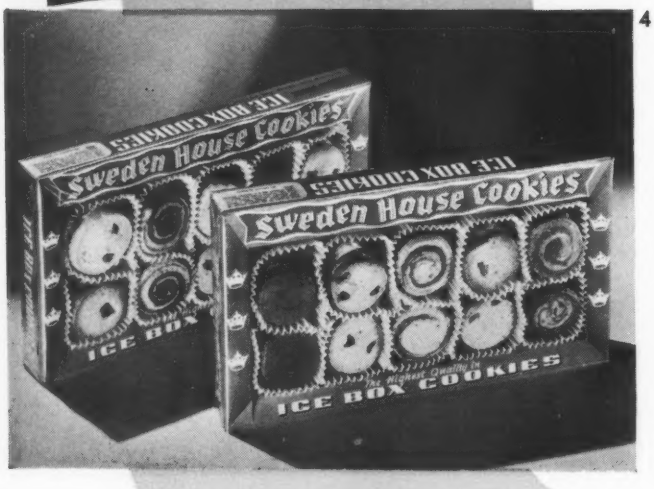
3 Home garden insecticides come in for their share of good packaging as proved by these three products manufactured by the Pennsylvania Salt Mfg. Co. Colorful labels tell the story by means of pictures on the 1-lb. cans of Kryocide and Kryocide D-50. The 3-lb. size is packaged in a duplex bag. Cans, American Can Co., New York. Labels, U. S. Printing & Lithograph Co., Baltimore, Md. Bag, Akrell & Smiths, Canajoharie, N. Y.

4 Visibility is the keynote of this folding carton designed for Sweden House Ice Box Cookies. The new design was worked out in brilliant reds and blues to resemble the art of Scandinavian peasants. The entire box is overwrapped with cellophane. Design, Egmont Arens, New York.

5 A reproduction of a photograph of fine chantilly lace forms the background for the rough-finish paper label on a new set of dessert sauces just introduced. These sauces, some of the first to be made in this country, are made according to a century-old recipe from a Dutch distiller in Holland. They are packed in three sizes of stock wine bottles and have a cellulose seal over a metal screw cap. Label, Ever Ready Label Corp., N. Y.

6 A new product on the market in a wartime package is Puff-Over, a pop-over mix packaged by C. S. Frost, Palisades, N. Y. Faced with the problem of packaging this mix, which contains whole powdered egg, Mr. Frost decided upon an



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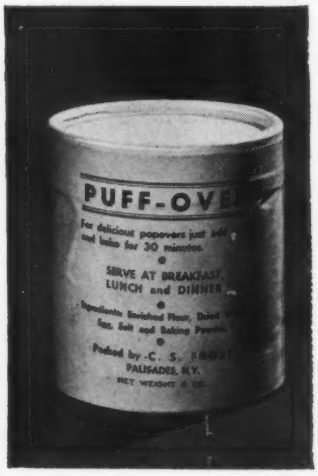


PAGEANT

all-paper container similar to the round pint containers used for ice cream. In order to effect a satisfactory seal he had the label made to extend to the top of the package, thereby covering the opening and sealing and labeling the package in one operation. Tests show adequate shelf-life for present distribution, but post-war plans include a possible switch to another type container and, definitely, a styled-up label with a full-color photograph. Containers, Sealright Co., Fulton, N. Y. Labels, Sam Weiss, N. Y.

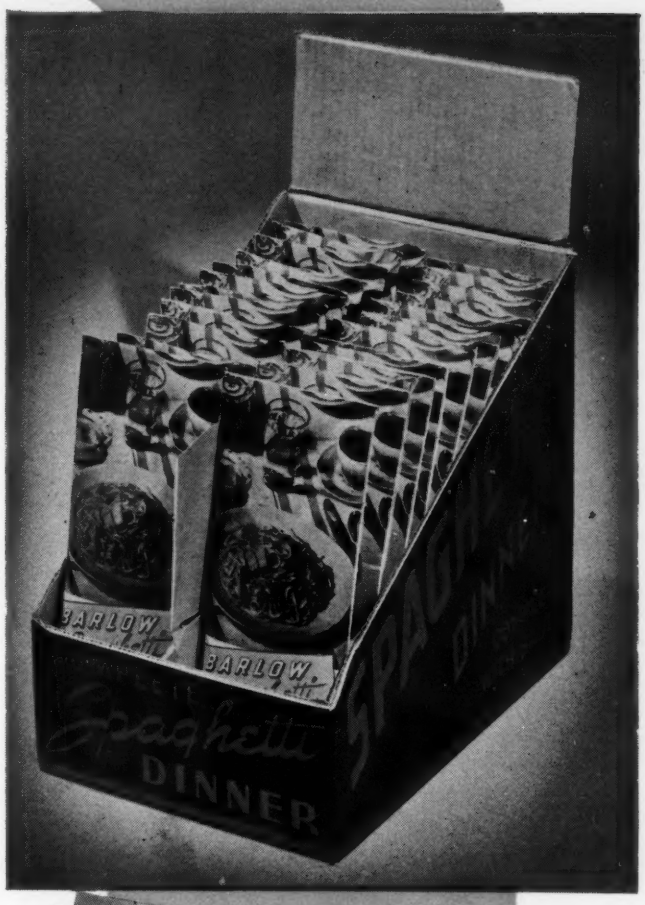
7 A natural color photograph decorates the envelope for Barlow Spaghetti Dinner. The sauce mixture is in a separate inner bag of laminated glassine. Twenty-four packages are shipped in a corrugated carton which opens up to the display case shown in the illustration. Shipping carton, Joseph Paper Box Co., St. Joseph, Mo. Outside envelope, Combe Printing Co., St. Joseph, Mo. Inner envelope, Milprint Co., Milwaukee.

8 The Alabama Agricultural Station, in its pilot plant at Auburn, Ala., is manufacturing, experimentally, 12 variations of ready-to-eat foods made from the sweet potato. They are being packaged at the plant in containers ranging from a set-up box for the assortment to cellophane bags. The Golden nuggets are in a folding carton inside of which is a heavily waxed, crimp-sealed white kraft paper bag. Breakfast food package, Birmingham Paper Co., Birmingham, Ala. Cellophane bags, Shellmar Products Co., Mount Vernon, Ohio.

9 Five companies are packing soluble coffee for troops on the fighting fronts in four-ounce metal cans such as these. The cans are hermetically sealed, key-opening type. One desirable feature of the can is that it can be re-closed after opening as the cover fits snugly into the collar. This package goes a long way towards assuring the arrival of coffee in perfect condition with flavor and aroma intact. Can, American Can Co., New York.

10 A new package planned to appeal to a larger group of consumers is this Stahl-Meyer liverwurst in a 6 oz. tin (right). Formerly the product came in the nine oz. size (left) and sold mainly to the "specialty" type customer. The new can is lithographed in red directly on the tin instead of carrying a paper label as the old package did. One color lithographing, used at this time, is due to wartime restrictions, but in spite of this the package is so well designed that the lack of additional color detracts nothing from its sales value.

7



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TOMORROW'S *Hosiery* to sell itself

*by Victor Lebow**

Long established traditions of hosiery packaging will be rudely jolted when packaging materials again become available. The whole basis of packaging of this important product has to be re-examined in the light of the character of postwar retail competition. The era of the pretty-pretty box wrap is passing and hosiery manufacturers will be designing their packages to meet the retaliers' requirements for:

1. Packages that will sell goods with a minimum of sales effort.
2. Packages which will encourage consumers to buy from one distributor as against his competitor.
3. Packages which will help produce a faster turnover enabling the retailer to work on a lower markup.
4. Packages which will encourage sales of several pairs at a time.

Why will retailers demand that hosiery packaging perform these functions? There are two general reasons. In the first place, there is the more intense competition which they will face on hosiery. Secondly, there will be the pressure upon retailers to achieve low cost efficient distribution.

Keep in mind that hosiery is the fastest turnover item of all soft goods. In the case of women's full fashioned hosiery, for example, this single item provides approximately 3% of the net sales of the average department store, according to the Controllers Congress of the N.R.D.G.A., but because of its rapid turnover women's hosiery furnishes over 7% of the net profits of the average store. Obviously, this becomes a most desirable item toward which other outlets will reach to supplement their volume. Developments in retail distribution immediately before and during the war provide a key to the nature of the competition on hosiery. We have seen the emergence of important new outlets, including cigar store chains, drug chains, automobile accessory chains, and to a minor extent as yet food chains, all as retailers of hosiery.

Among the older established outlets for hosiery we have seen, on the popular priced level, a steadily mounting intensity of competition between the different classes of distributors. There is the general competition between the chain store and the independent; the special competition between the larger units of the chain stores and the department stores. We have seen the chains doing a larger and larger proportion of their business in their larger outlets which are taking on more of the characteristics of a department store because they are increasing the variety of articles, widening their price ranges and appealing to an ever-increasing sector of the population. We see also the struggle among the smaller independents for survival. (I have developed the points made here more fully in two articles, "The Trend Toward Lower Markups" in the February 1944 issue of the *New York University Journal of Retailing*, and "The Nature of Postwar Retail Competition" in the July 1944 issue of the *Journal of Marketing*.)

For all of these traditional outlets for hosiery, men's, women's and children's hose present an important source of volume and profit. Since there will be not only the competition between these outlets, but also between them and the new "unorthodox" distributors, it is clear that the chains, the variety stores, the general merchandise chain stores, the department stores, and the independents served by the jobber, will make every effort to retain their hosiery business.

This, roughly, is a preview of competition in the retailing of hosiery in the years ahead.

Out of the larger arena of economic policy and forces, emerge also pressures upon the retailer to achieve economy and efficiency in distribution. This nation is committed to a program of full production and its concomitants of full employment, higher wage levels and a higher living standard. We are going to produce vastly more merchandise, a tremendously larger volume of commodities, than ever before. In order that these commodities reach the consumer quickly it is clearly necessary that the markups be low, and that the cost of transporting, displaying and selling the goods to the ultimate consumer be kept down. It is only in this way that the consumer will be able to purchase the largest possible volume of the commodities produced. We can expect to see, as a result of the various pressures in the community, a higher minimum wage level, and a greater purchasing power on the part of the great masses of people.

In other words, the necessity for efficiency and low cost distribution will be greatest precisely in the areas serving the lower income groups—the distribution of popular priced commodities. The pressure upon the retailer will not be simply a patriotic or altruistic one, there will be valuable rewards to the low cost distributor and heavy penalties upon the less efficient and the higher cost distributor of popular priced goods.

Hosiery packaging up until the present has been designed principally to carry the product neatly and compactly from the mill to the retailer's shelf. The box was decorated mainly to flatter the amor propre of the manufacturer and possibly to beguile the stock clerk in the store. The consumer rarely saw the box. Sometimes full-fashioned hosiery was sold to women by the box—but not as a general thing. Men's hosiery was not sold by the box except for the Guaranteed hose.

The Guaranteed socks deserve special attention as a transi-

* Sales Manager, Chester H. Roth Co. Inc.

tional type of packaging. Here are four pairs of socks packed in a box with a guarantee that the four pairs will give four months' wear or will be replaced free by the mill. The selling story of the socks, the dramatization of the bond or certificate, and the guarantee itself are all features of the box wrap. Therefore, this box itself becomes an important aid to selling. Mass displays of the boxes, with just a few of them opened to show the type and color of hose, have been the most successful form of presentation. This type of box has sold with a minimum of personal selling and attention in department store basements and main floors, general merchandise chains, auto accessory chains, drug chains and food stores. It is the closest thing to a self-service packaged item for the hosiery industry and is a precursor of packaging to come.

In children's hosiery, and in the highly important anklets for women and children, packaging has been practically nonexistent. They are shown and sold from open display on counters in chain stores, and are kept "under glass" in the average department store or sold from tables. A self-selling package is the one illustrated here—a patented band. This band provides an individual display card for each three pairs of anklets and features not only the three ways in which to wear the anklet but also the guarantee of three months' wear for the three pairs. This self-selling device has proved highly successful in stores which, during the war, have been forced to provide a minimum of personal selling to popular priced hosiery such as basement stores, drug chains, general merchandise chains, and others.

Where variety of pattern and color and the opportunity for individual choice are selling features of hosiery, as they are in most men's hose and in most anklets, merchandising the boxed or packaged group will probably not make much headway. But in the more staple types, packaging which will make possible self-service must become an important factor in hosiery marketing.

In attempting to solve the problem of selling men's fancy hose on a self-service basis we have used the idea of featuring the single most important fancy pattern of all—the embroidered clock—putting up three pairs in assorted colors in a box under the names of "3 O'CLOX" and also "BOX OF CLOX." This is an illustration of selling a *styled* item in a package, something which has generally been considered unmanageable. It has, however, proved very successful as a self-selling item.

It is clear that so highly desirable an item as women's full-fashioned hosiery—desirable for its volume and net profit—is going to be attractive to outlets who enjoy a heavy traffic of women shoppers. Assume for example that among these outlets will be department store basements who must meet the competition of the big national and regional chains, the general merchandise chains and quite likely some new outlets which will be in the field. The department stores have traditionally worked on a 36% to 40% markup on women's full fashioned hosiery in the past. Keep in mind that there are other types of outlets which could profitably carry a limited line of the fastest selling types of women's hosiery and sell the item at from 22% to 28% markup. Clearly, this would be ruinous (*Continued on page 140*)

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PHOTO 4, COURTESY E. I. DU PONT DE NEMOURS & CO., INC.

1—*Dramatized guarantee certificate sells men's boxed hose with a minimum of sales help.* **2**—*High style items such as socks with clocks have also been sold successfully by the box.* **3**—*Band on bobby socks serves as display piece as well as package.* **4**—*Hosiery, pre-packed in transparent cellophane wrap, sells from a counter sample.*

1

***1**—Prince Matchabelli introduces complete line of "Duchess of York" make-up with subtle use of crown trademark. **2**—New automatic construction for plastic lipstick adopted by Daggett and Ramsdell. **3**—Country scenes of 1900 era decorate new Hudnut "Yanky Clover" packages.*

Cosmetics . . . ready for the holidays

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New cosmetic packages are ready for the fall and holiday trade. Perhaps no other industry, beset with so many wartime packaging problems, has come forth after three years with colors flying so proudly.

Despite the absence of transparent materials, restrictions on glass, metal and plastics, use of folding cartons instead of set-up boxes to save paper, elimination of certain elaborate gift combinations, double packaging, the outward appearance of cosmetic packages on the nation's counters will be as gay and distinctive as ever. They may be simpler, but in some cases this is to the good.

Noteworthy throughout many of the lines is the subtlety with which trademarks and product identity have been handled. Identity is always strikingly evident, but in a way that makes each package one the user will be proud to keep on her dressing table or bathroom shelf in its original container. Sometimes this is done by an individualized shape of a container—sometimes by the use of the trademark itself as a decorative spot, like the Matchabelli crown on the plastic make-up boxes and lipstick cases for Duchess of York.

Food, drug and household manufacturers might well take a lesson from the cosmetic industry in this respect when redesigning their postwar packages. Brand names will be seen longer if the consumer likes the package so well that she will not switch the product to another container at home.

A little more metal will probably be seen for lipstick containers and closures this fall, since the Government has allowed reject metal to be used for such purposes, but in what quantities is still questionable. Interpretations of the order are still unclarified.

Among the successful lines to which new items are being added this year is Helena Rubinstein's "Heaven Sent." This line, with Madame's inspiration of angels for the packaging theme, was introduced about three years ago in three sizes of eau de cologne, soap and dusting powder. Since then, more and more items have been added until today "Heaven Sent" comprises fourteen different products. The pink, blue and gold angel and cloud motif has been carried throughout,

adapted to any type of material used for the packages—embossed and printed on cartons and boxes, silk-screened and decaled on bottles and plastic.

Important Heaven Sent gift items are the soap combinations, one a box of soap angels, the others containing soap with the Heaven Sent angels molded into the cake. Adaptations and simplifications in packaging were made, depending upon the availability of packaging supplies. For example, when a special type of glass mold for the perfume bottle was unobtainable, another distinctive shape was selected to augment the supply. A silk fabric covered box for a smaller size perfume was replaced by a printed embossed paper covered box.

For Heaven Sent eau de toilette, Madame Rubinstein with Ladislas Medgyes designed a glass mold that resembles the figure of an angel. The closure on this was a sphere to simulate the head. At present, the spherical closure is unavailable, so the bottles have been capped by standard black or brown urea closures coated with harmonizing color. A printed folding carton used as the protective cover for the dusting powder saves quantities of paperboard and at the same time provides a much more attractive, identifiable outer container than a former gray chipboard box. Among the new items is a white cellulose acetate cologne compact on which the angel label is silk screened. The lipstick container is a paper swivel, a wartime development. On a small bottle of perfume sachet a distinctive touch is added by use of a scalloped oval label to give width to a standard bottle shape.

Big-time promotion of the Heaven Sent package theme was brilliantly launched when 500 pink-and-blue balloons bearing the angel and cloud motif were dropped from the roof of Bonwit Teller's New York store, each with a wicker basket attached containing a vial of cologne and the message "Out of the Blue to You." Women crowded Fifth Avenue to grab for them.

Prince Matchabelli, for years known for perfumes, lipsticks and compacts, marches into the 1944 fall season with a complete line of make-up in new packages for the Duchess of York family. In the line will be lipsticks, powder, rouge, eyeshadow, mascara and a make-up foundation.

The color scheme is one that is perennially a woman's favorite—turquoise, white and gold. A novel departure from a conventional glass cream jar is a ceramic container of classic shape in which the lid is encrested with the Matchabelli crown. Eyeshadow and mascara containers of white plastic also bear the maker's crest—with no other identification on the top of the container. Any of these containers makes a beautiful dressing table or purse piece without wearisome trade motifs, yet the crown defines them as Matchabelli.

Late in the summer Yardley sent out what they called "the story of the year"—the return of a metal lipstick, made from Government released metal. The entire case is brass finished to give a rich gold effect with a vivid red enamel band encircling the base. A printed decorative paper band around the cover carries the original Yardley Bond Street motif.

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4, 5 and 6—Helena Rubinstein's "Heaven Sent" line includes many new items. Packaging is adapted to available materials. Spherical closures on "angel" bottles replaced by standard caps. Printed folding carton for dusting powder box saves paperboard. Stock bottles are enhanced by careful label treatment. Embossed paper replaces silk covered boxes. 7—Yardley has a metal lipstick made from recently released government metal.

8

8—*John Hudson Moore's latest "Sportsman" shaving bowl is green ceramic with big-mouth bass handle.* **9**—*Kidskin trims bottle for "Shameless" by Nadair Parfums, Inc.*

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10—*Chaubert adds "Fabulous" to its famous drum bottle family.* **11**—*Surfspray, a new men's line, has black walnut caps on bottles and wooden shave bowl and stick.*

In a promotion of bath preparations, Yardley introduced this year what is called Lavendomeal (lavender scented cereals and water-softening agents) in a nostalgic wooden container, reminiscent of an old-fashioned spice box. Also with the bath promotion was featured a liquifying cream. The plastic closure for this container is an interesting adaptation of the well-known Yardley bee motif molded in the top.

At a series of luncheons in New York for beauty editors, Richard Hudnut introduced the complete redesign of its popular Yanky Clover line, including perfume, toiler water, cologne, sachet, dusting powder and talc. "The romantic, yet homey American countryside," said the company, was chosen as the theme. The packages have the flavor of the 1900 era: picnics under the stars, square dances, box socials, new mown hay, fresh baking. These country scenes are actually portrayed on the packages in a clover color combination of fuschia and yellow. Sizes of the packages range from little individual cake sachets to large gift boxes. Closures on the bottles are ceramic in the shape of a clover blossom. Hudnut was one of the first cosmetic houses to adopt the ceramic closure as a wartime alternate.

Charbert introduces a new fragrance, "Fabulous," in its famous family packaged in the Charbert custom-mold drum bottle. Product identity is achieved by the label and the malachite green and gold of the fabric-covered padded box, which distinguishes this scent from others offered by this company.

From the Coast comes news of stock bottle ingenuity planned for "Shameless" a new "eau de perfume" by Nadair Parfums, Inc., Los Angeles. Tiny pieces of green kid leather, shredded, and white and lavender flowers trim an ordinary closure and stock bottle. Lettering on the bottle, by special process, is gold. The paper outer carton is cream with brown lettering.

Daggett and Ramsdell introduces a new lipstick case for its "Manhattan Red." The stick is affixed to a collar. When the collar is turned through the spiral slit in the case, the lipstick swivels to usable position—a new mechanical trick for an automatic plastic lipstick container.

Forecasters are predicting a big upswing for men's toiletries: (1) because war workers, recruited from the middle classes, are more conscious of preserving their appearance and standards of nicety—and (2) because millions of the men in the Army have become accustomed to the use of shaving aids, toilet waters, hair aids to keep up appearance for Army inspection.

At any rate, the number of men's lines have been increasing and are being presented with (*Continued on page 138*)

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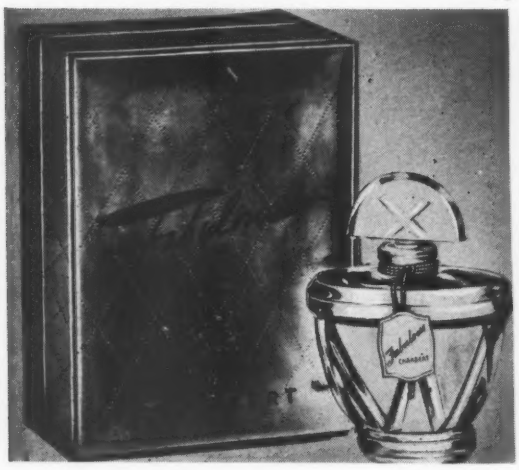

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1—*Packaged orange juice, quick-frozen in glass jars, now comes to the breakfast table with a true fresh taste and with nutritive and vitamin qualities intact.*

Frozen orange juice in glass

If the tasty juice of ripe oranges were frozen and packaged in a container that would retain its original flavor; if it were packed in transparent glass to reveal its rich golden color; it if could be served as fresh as if it had just been squeezed from tree-ripened fruit—would it receive enthusiastic consumer response?

To Pure Fruit Juices, Inc., of Los Angeles, the answer to this question was obvious. It was simply a question of how to do it.

As long ago as 1936, experiments were made with a pilot plant which proved that it was practical to quick-freeze citrus juices in bottles. By 1943 problems incident of full-scale production had been solved and the entire year's pack was frozen in glass jars and distributed. The year-long test is said to have demonstrated dealer and consumer acceptance insuring that this type of pack will be a permanent fixture.

It is difficult to retain the elusive, "fresh" taste of freshly squeezed orange juice. The loss of flavor, accompanied by rapid dissipation of the natural Vitamin C content, is said to be the result of chemical action which takes place after the juice has been extracted from the fruit and allowed to stand, even for a short time.

The Los Angeles company concluded that the only way to preserve the flavor was to arrest this chemical action by freezing—quick freezing, in the final container, immediately upon extraction from the fruit. Experience thus far seems to confirm the original theory of the company. Upon thawing, even after months in the container, the orange juice reverts to the fresh condition in which it was frozen, and taste is said to be indistinguishable from juice freshly extracted.

At its present stage, this interesting packaging innovation is analogous to other frozen food packaging, with the exception that some difficult technical and mechanical problems have been surmounted to permit freezing in glass rather than paper or metal packages. The juice is packaged and frozen in 29-oz. glass jars, with a metal screw-top, hermetically sealed. It must of course be kept refrigerated during storage and shipment, and in the dealer's regular frozen food cabinets, and should be thawed by the consumer just prior to use.

The elements of time and the proper container have been found vital to the packaging method now used by Pure Fruit Juices. Since a large part of the processing takes place in the package, containers must be 100% functional.

Aside from the special tubular freezer, much of the equipment used in handling the orange juice is existing equipment which was rebuilt and adapted.

First step is the rinsing of the glass jars. A simple pedal-operated machine equipped with two forced-pressure nozzles was devised for this purpose. The operator inverts a jar over each nozzle and presses a foot pedal to release the jet of water. After rinsing, the jars are placed on a conveyor which carries them to the filling machine.

The adaptation of the filling machine, which was originally an automatic type designed for filling cans, is an example of ingenuity and resourcefulness. Due to the dimensional differences between cans and glass jars—and to the fact that cans are usually cylindrical in design and have an opening with the same circumference as the sides, while jars converge at the top and have smaller mouths—the problems involved were numerous and complex.

Two major changes in the intricate mechanism of this machine were necessary. New filling valves were designed which would accommodate the smaller mouths of the glass jars. It was also necessary to adjust the new valves in order to allow an exact and precise amount of juice to flow into the jars. This must provide for a specific cubic area of "head

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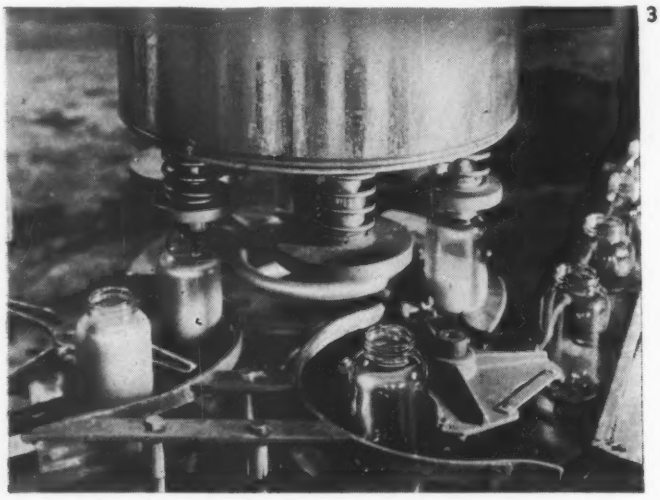

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2—Orange juice mass, cut in half, shows air-space core formation peculiar to shell freezing. This assures uniform texture. **3**—*Filling head adapted from former can filler is adjustable to three sizes of glass jars. Filling level must be exact.* **4**—*Screw lids with hermetic rubber seal are started by hand, tightened by machine.*

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space" in the jars, very accurately determined by the expansion found to result from the quick freeze process. The new valves can be adjusted to suit varying characteristics of different juices.

It was necessary also to alter the mechanism which formerly elevated cans to the filling valves to accommodate differing heights of glass jars. The machine will now fill three sizes of glass containers if desired.

Converting a hand capping machine into a semi-automatic machine which screws lids on the glass jars was the next accomplishment. The capping procedure has been split into two operations. The metal lids are first started on the jars by hand and the capping machine completes the operation. Lids are fitted with synthetic rubber gaskets, and are screwed down until the gasket is compressed and a hermetic seal effected. Due to expansion during the freezing operation, there is a certain amount of outward pressure on the lids.

The filled and capped jars travel on a conveyor from the capper to the spiral tubular freezer, which is the real secret of the freezing process. The orange juice is frozen at a temperature of 20 deg. below zero F. in approximately 30 minutes.

In the words of W. J. Finnegan, originator of the freezing process:

"The quick-freezing apparatus is of welded construction and consists of three freezing tubes, refrigerant accumulator and wells for storing the secondary heat transferring vehicle, which consists of a mixture of alcohol and water. Ammonia is used as a primary refrigerant and applied in a full-flooded liquid-recirculating system which recirculates the liquid refrigerant, with entrained gas, through the annular restricted flow areas surrounding each freezing tube. The feeding of the refrigerant is automatically controlled by a low-side liquid float control valve. The secondary refrigerant is recirculated through an annular restricted flow space formed by the internal surfaces of the freezing tubes, adaptors and glass containers being frozen.

"The juice within the glass containers is agitated continually throughout the freezing process by revolving all containers within the freezing tubes as freezing progresses. The speed at which the containers are turned is varied as required to obtain a suitable agitation which has been found to be best suited for different size containers and various kinds of fruit juices. Likewise, feeding, freezing and harvesting of containers is adjusted as required to vary the freezing time of different size containers or various types of juices. These adjustments are easy to make and require very little time in order to gain the regulation necessary to obtain an optimum freezing condition.

"The dual action of brine cooling and food freezing occurs within each tube as the brine passes through the narrow annular space formed by the circumferential surface of the containers and the interior surfaces of the freezing tubes. The continuous turbulent condition of the primary refrigerant, secondary heat transferring vehicle and the juice within the containers maintains a maximum rate of heat transfer from the food to the primary refrigerant while recirculating a minimum quantity of brine. Moreover, restricting the brine flow passages reduces the critical velocity and thereby greatly accelerates the heat transfer from the food to the brine and from the brine to the refrigerant during the singular brine flow action in each freezing tube.

"The revolving movement of the cans agitates the juice within the containers continuously as the freezing progresses. Any air within the containers is formed as a core in the center of the frozen mass. This method of forming the frozen mass

as the freezing progresses decreases the thickness required to be frozen in any size container to a minimum and increases the freezing speed very materially. Moreover, this method of freezing greatly improves the appearance of the frozen product by rendering a finished frozen food of uniform color and texture.

"In the freezing of citrus juices and the like, this freezing method eliminates separation or 'freezing out' of water as freezing progresses, which in turn reduces to a practical minimum the amount of solids and essential oils which normally form in the core of the finished frozen mass. Furthermore, such core concentrations have a much lower freezing point than the initial freezing point of the fruit juice and often return to liquid when held in a zero deg. F. storage; or this condition may prevent complete solidification of the fruit juice during the freezing process."

As the jars of frozen orange juice emerge from the freezer, they are labeled by hand and placed in partitioned cardboard cartons preparatory to shipment. Breakage has been kept down to about $^1/_{16}$ of 1%.

The frozen juices in cartons are held in cold storage and eventually shipped from factory to destination in a refrigerator car packed with ice and 30% salt. The frozen packs are handled and sold to the ultimate consumer in the same manner as other frozen foods.

Packaging frozen fresh fruit juices in glass is a business still in its infancy. It is too early to make comparisons or quote statistics. But because it seems to be the first practical way in which the consumer can get truly fresh-tasting orange juice without squeezing the oranges, there has been an increasingly good sales response.

From the standpoint of economics, there are impelling reasons for success. Each year, in the commercial orange-growing sections of Florida and California, there is a real problem in disposing of fruit which is too ripe to be shipped to distant markets. In bumper crop years, tons of fruit are destroyed for lack of a market. It was in an effort to relieve growers of this loss that canning of orange juice was attempted. If the frozen pack becomes a really popular product, the problem would appear to be solved.

The method of "shell" freezing bears a close resemblance to that curently used by drug firms on blood plasma and penicillin. It is a natural next step to dehydrate the orange juice from the frozen state, in the final container, just as is now being done with the drugs. This method of "sublimation" from the frozen state,[1] under high vacuum, reduces the product to a powder. This powder then needs only to be vacuum-sealed in the moistureproof container for indefinite preservation, and upon the restoration of water is brought back instantly to its original liquid stage.

As with the blood plasma and penicillin, ordinary dehydration of the orange juice by means of heat would not be satisfactory, as it would break down the delicate chemical and flavor elements. Freezing as a first step is essential, and at no time during the dehydration may the product thaw.

Considerable thought has been given to the possibility of thus drying frozen orange juice, and some authorities are of the opinion that it will eventually be done. The advantages, in that the product could be stored and handled without refrigeration, are obvious.

[1] See "Penicillin," MODERN PACKAGING, February 1944, p. 53.

Credit: Cartons, Longview Fiber Co., Long View, Washington. Caps and gaskets, Western Crown & Cork Co., San Francisco, Calif. Labels, Schmidt Lithograph Co., San Francisco, Calif. Jars, Latchford Marble Glass Co., Los Angeles, Calif.

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***5**—Conveyor carries capped jars to spiral tubular freezer, where they are loaded by hand, revolved mechanically in bath of refrigerant. **6**—Frozen jars emerging from opposite end of freezer are labeled by hand and placed immediately in inner carton. **7**—Double cartoning helps insulate the frozen contents. Both cartons are re-usable.*

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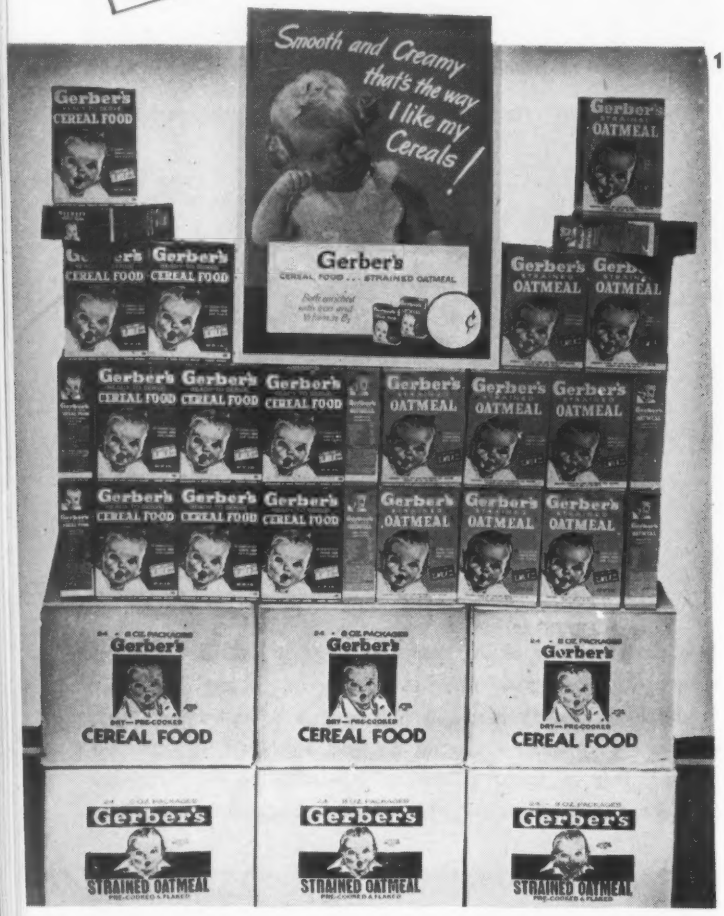
Display Gallery



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1 The full-color poster, around which is built a 10-case display of Gerber's Cereal Food and Strained Oatmeal, was tested in several selected stores before general distribution. The displays were put up for one week and a check was made of sales figures before the test. It is said that the average increase for the stores concerned amounted to 215%. The main attraction, of course, is the famous Gerber baby but the poster also allows a space for featuring a combination offer of the two cereals at a special price. This two-cereals-at-one-time sales technique has done a lot to help run sales figures up to new highs, according to retailers. The poster is printed in three colors and, when featured with the new red and blue cereal packages, it makes a striking and eye-catching display. Gerber's point out to the retailer that the young mother, to whom the display appeals, spends more than twice as much for food as any other ordinary customer and therefore her business is worth going after. Display, Dickinson Bros., Grand Rapids, Mich.

2 It took more than 20 gross of Woodbury's Soap to build this mammoth display at Bettendorf's Hampton Village Market in St. Louis. The floor stands which form the main portion of the display are supplied the retailer by The Andrew Jergens Co. which claims that mass displays of this sort have jumped sales from 200 to 600% in various stores throughout the country. Sales from nearby displays of other grocery items have increased also due to the pulling power of these floor stand displays. To quote Mr. Bettendorf: "...It also acted as a magnet in attracting Mrs. Consumer to other quality and profitable items, including fruits and vegetables, which were featured near the Woodbury display." Jergen's is pushing this floor stand by means of a small folder aimed at the retailer which tells him how he can use displays to tie in with the company's national advertising in both publications and on the radio. Display, Thomas A. Schutz Co., Chicago, Ill.

3 A single die-cut piece of paperboard, easel mounted, makes this effective "hay-fever relief" display for Stearns & Co. The platform front is meant not only for the company's products but for all the things a druggist handles which would aid hay-fever sufferers including eye drops, nose drops, atomizers, syringes, inhalers, masks, filters and glasses. The full-color cartoon-type drawings put the hay-fever story across effectively. Display, The Forbes Lithograph Co., Boston, Mass.

4 "Bread at Its Best" is the theme accented in the current 1944 advertising program sponsored by the Quality Bakers of America Coop., Inc. More than 100 independent wholesale bakers from coast to coast are reaping the harvest from newspaper, outdoor, point-of-sale and radio advertising. One of the point-of-sale pieces is this full-color, easel-mounted counter dis-

(*Page 108*)

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play planned to remind the hurried housewife to buy the most important item of her family's everyday diet. Each member of the organization has his own brand-name on the pieces to be used by his particular retailers. This campaign is the culmination of three years of planned merchandising which has included pre-training of salesmen, establishment of incentives for both dealers and salesmen and a close tie-up with dealer merchandising chiefly through store displays. Display, Einson-Freeman Co., Inc., Long Island City, N. Y.

5 Durkee's full-color display card is planned to be used in conjunction with a complete array of spices for home-canning needs. The illustrated piece tells customers which spices are necessary for the various types of foods and also how to use victory garden produce in canning. Along with this display come colorful pennants and signs for basket, counter and gondola displays as well as a recipe folder containing 28 recipes for victory garden crops. This is said to be one of the most complete campaigns on home canning ever undertaken by Durkee Famous Foods, Inc. Display, Charles Offset Co., New York.

6 Because of the tremendous amount of promotional advertising behind vitamins and because I.V.C. Vitamins in particular are sold primarily through physicians' prescriptions, it was rather difficult to get an unusual slant to a window display for these products. After long analysis it was decided to approach the problem from an institutional and historical viewpoint. The illustration depicts the English sailor of a hundred years or more ago who, through lack of vitamins, was stricken with scurvy. The "sell" was injected into the display by means of authentic laboratory photographs showing vitamin deficiencies in rats. The framed painting, after being used in the window, can be removed and hung in the prescription department as a permanent decoration. A miniature reproduction of the painting is worked into a counter merchandiser which carries a free booklet, "The Story of Vitamins." Display created by Hussey-Woodward Inc., New York.

7 A treasure chest, complete with pirate, makes a startlingly effective counter piece for Ajax combs. The chest of this three piece die-cut display is finished in natural-wood color while the side pieces are four-color illustrations. Of particular interest is the slant-wise construction which gives the chest a three-dimensional effect. Under the display and reached from the back is an opening into which the dealer slips a box of assorted combs so that his stock is always handy and impulse buying is speeded. The combs on display lie in depressions in the platform and are held in place by the price markers. Display, Friedman Art Displays, New York City.

(*Page 109*)

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Acceptance of dehydrated foods

Whether or not there will be any considerable postwar market for war-developed dehydrated foods in consumer size packages is a debatable question. It is a question of great interest to the packaging field because of the numerous wartime developments of suitable moisture-vapor-resistant containers and wrappers—utilizing papers, films, metals and laminations.

Consumer packaging of dehydrated products appears, in fact, to offer no problems. There is a wealth of efficient materials from which to choose. Whether or not they will have a large future in this field appears to hinge entirely upon acceptance of dehydrated foods by the housewife.

The first attempt to assay scientifically these consumer likes and dislikes is, therefore, of considerable importance to packaging. The results are found in a report just issued by the Bureau of Agricultural Economics of the United States Department of Agriculture.

Between April 17 and May 31, 1944, the bureau conducted a survey among 400 Chicago housewives and their families, seeking answers to the following five questions:

1. Will housewives be willing to buy dehydrated foods if they are made available?
2. Which foods are most likely to be bought?
3. How do dehydrated foods compare in taste with fresh and canned foods?
4. What advantages and disadvantages do housewives find in the use of dehydrated foods?
5. Do housewives think dehydrated foods differ in nutritional value from fresh foods and canned foods?

Free packages of dehydrated foods were presented to each of the housewives, who were carefully chosen to represent a cross-section of the Chicago population, with no attempt made to influence the users' attitudes toward the food. On the first visit the housewife was merely interviewed briefly to determine the extent of her previous experience with dehydrated foods and told that the interviewer would return in two weeks.

Foods used were diced white potatoes, riced white potatoes, sweet potatoes, beets, carrots, cranberries, milk and eggs. These, it will be noted, are the foods which are now being dehydrated, packaged and shipped in huge quantities to the Armed Services and Lend-Lease; the primary purpose of the survey was to indicate the postwar use of these products and facilities.

The Department of Agriculture says: "This investigation of consumers' reaction to dehydrated foods is an initial effort, and considerable caution should be exercised in interpreting the results. There is little doubt that the nature of the experiment and of the interviewing methods tended to increase the apparent acceptability of the dehydrated foods. This fact should be considered in the evaluation of the study and a certain discount should be applied to many of the data presented."

For each food used, a majority of the housewives who tried the food said that they would be willing to buy it. Most would expect dehydrated foods to cost either the same as fresh foods or less. But some housewives said they would buy dehydrated foods even if they cost *more* than canned foods, although most would prefer not to pay more for dehydrated foods than for fresh foods. Fifty-six per cent said their families had liked all the foods served.

Each family was given three of the foods in sufficient quantities for serving at more than one meal. The 450 housewives were divided into six sub-samples, according to the foods they were given and the way the foods were packaged. The food used within each sub-sample are shown below:

Group Ia	*Group Ib*	*Group IIa*	*Group IIb*	*Group IIIa*	*Group IIIb*
Diced potatoes (cans)	Diced potatoes (cellophane)	Sweet potatoes	Sweet potatoes	Carrots (cans)	Carrots (cellophane)
Cranberries	Cranberries	Beets	Beets	Riced potatoes	Riced potatoes
Milk—A	Milk—B	Milk—A	Milk—B	Eggs	Eggs

Housewives' reactions to the food were little different, it was found, when the foods were packaged in cellophane bags or in tin cans. However, they seemed to prefer diced potatoes in cans and carrots in cellophane. Since the food was used promptly, the survey did not test the relative keeping qualities of the two types of containers. Also, there was no difference of statistical significance in the housewives' reaction to dried milk made by two different companies.

The Bureau of Agricultural Economics is extremely cautious in presenting its conclusions, pointing out that in a survey of this kind free samples, instructions on use and personal contact help greatly to break down initial sales resistance, and tend to give exaggerated results. It is the Bureau's contention that individuals will react more favorably to foods given them than to those they purchase.

There was no indication that the housewives would buy dehydrated foods in large quantities as substitutes for fresh or canned foods. Many of them probably would be willing to buy dehydrated foods for only occasional use.

Comparisons of cost with the canned or fresh product did not appear to be the decisive factor. Less than 10% thought persons with very low incomes would be especially or exclusively attracted to dehydrated foods.

Housewives expressed willingness to buy dehydrated foods chiefly because they liked the taste (35%) or found them easy to prepare (21%). On the contrary, among those who were not willing to buy the foods, the principal reasons given were that they don't taste good (20%), they are hard to prepare (10%) and they prefer fresh foods (14%).

Few mentioned as favorable factors the nutritive value of dehydrated foods, the fact that they keep longer than fresh foods, or that they save space.

About three-fourths of the housewives using the foods liked their taste. Housewives who liked the foods indicated their willingness to buy them in the following order of preferences: cranberries (89%), eggs (74%), sweet potatoes (70%), beets (63%), milk, carrots, diced potatoes and riced potatoes.

Most housewives did not think (*Continued on page 138*)

The Greeks had a name for it

Grecian women were really noted for their beauty. They made famous the grecian nose whose ideal shape was a straight line from forehead to tip.

Yet, their toilet methods were primitive compared to ours. And only the very rich could be very beautiful. Only the rich could afford the expensive cosmetics which beauty demanded.

Today, cosmetics are within the reach of every woman, because all of today's powders and creams are *packaged,* and many of them are packaged in containers by F. N. Burt.

Burt has achieved eminence in the field of manufacturing great quantities of round, oval and square set-up boxes for the cosmetic and drug fields. Our own special machinery is the reason for our rapid production and low cost.

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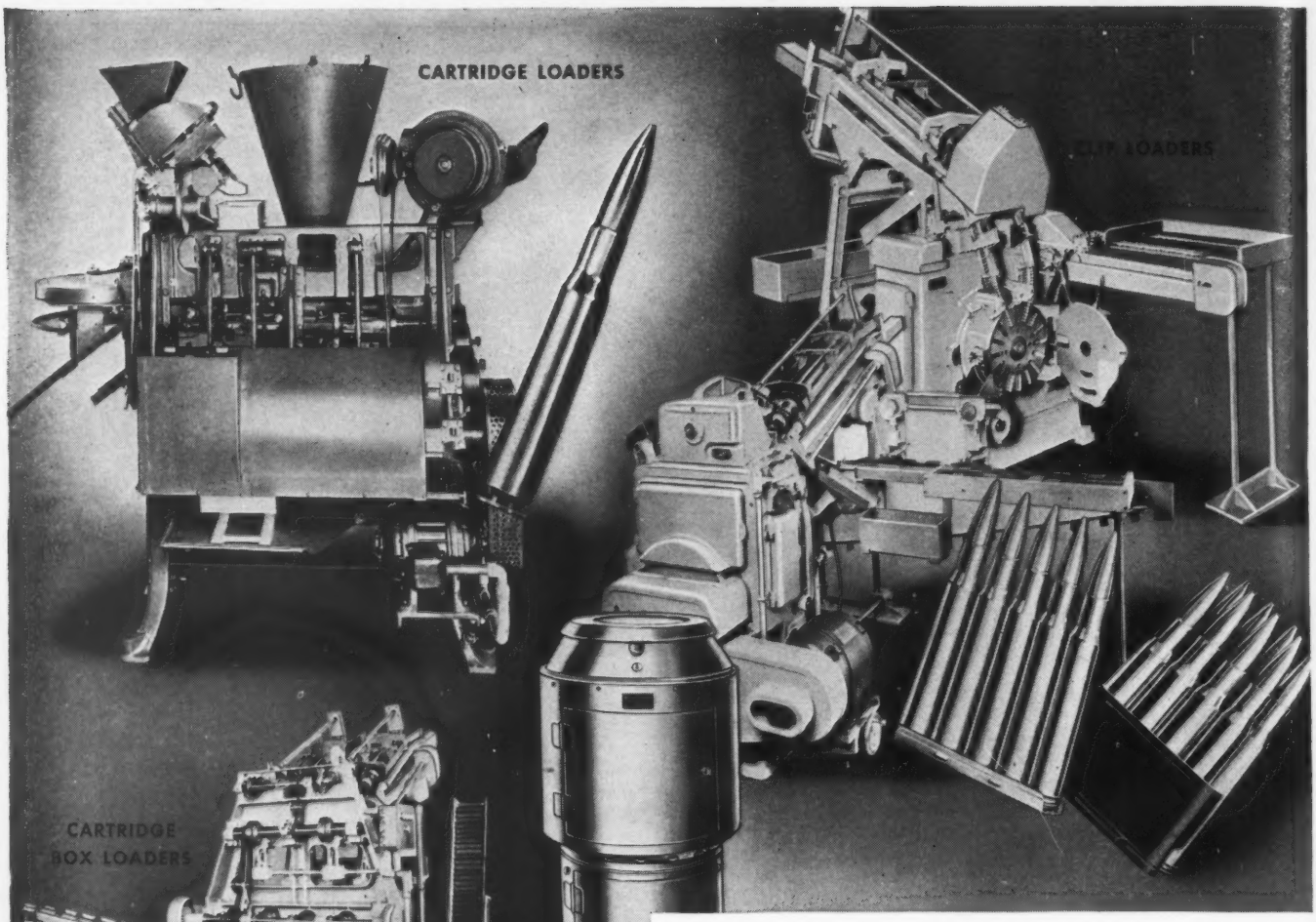
915 Military Park Bldg. — NEWARK, N. J. — Telephone Market 3-0788

CANADIAN DIVISION
Dominion Paper Box Company, Ltd. — 469-483 King Street, West, Toronto 2, Canada



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When peace comes we will be better qualified than ever to meet new packaging requirements and the urgent need for *lower costs.*

We have been building new wrapping machines right along for essential civilian products and supplies used by the Armed Forces. Equally important, many of the armament machines we build, particularly the Navy Gyrocompasses, embody advanced mechanical principles applicable to packaging machinery. And all of the equipment calls for the highest type of designing skill and the finest precision workmanship.

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PACKAGE MACHINERY COMPANY

Over a Quarter Billion Packages per day are wrapped on our Machines

S-Coating... a self-sterilizing surface for packaging materials

*by Dr. Alexander Goetz**

The packaging of foods and other substances which are susceptible to attack and subsequent deterioration by microbial forms of life such as bacteria, yeasts, molds, fungi, etc., imposes the following requirements upon the container or wrapping material:

First, this material must be protective not only against dirt, dust and spoiling and corrosive constituents of the atmosphere such as oxygen and moisture, but also impenetrable to microbial bodies and their spores.

Second, the inner surface of the container and wrapping material must be, at the time of packing, as closely as possible free from organisms.

In the case of metal containers—the traditional tin can—both conditions are easily fulfilled, because the metal and its seams can be relatively easily rendered impenetrable to external influences of any sort and subsequent sterilization in the autoclave renders the absence of spoilage organisms within the container virtually certain.

This situation is considerably different in the case of metal foil or organic materials such as cellulose and its derivatives and plastic products, used as containers or wrappers. It is difficult, if not impossible, to sterilize such containers after they have been filled and sealed, nor is it possible to keep the seams of plastic wrappers so perfect that they form perfect "barriers" for micro-organisms under all conditions of subsequent storage.

An obvious method to overcome, at least to a large extent, the relative lack of protection against microbial attack of the contents of such packagings would be the incorporation of, or the coating with, a germicidal material in order to produce a microbial barrier which may be termed a self-sterilizing surface on one or both sides of the container.

The use of most of the numerous germicidal agents and antiseptics for this specific application is made impractical because they act upon the microbial organisms by going into

* Research Director, Rare Metals Institute, California Institute of Technology, Pasadena, Calif.

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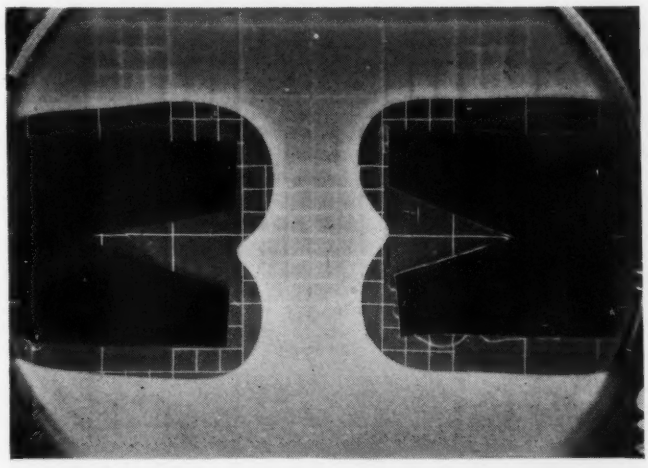

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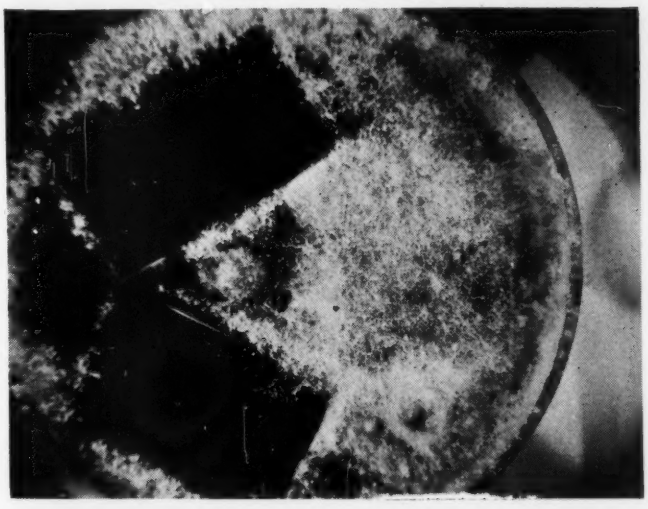

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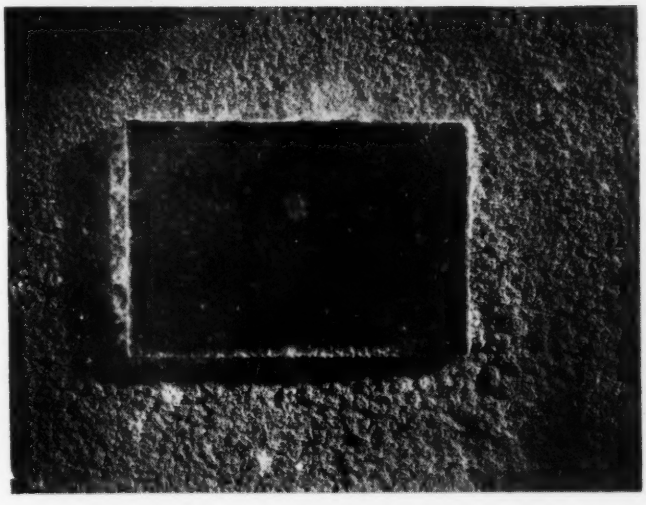
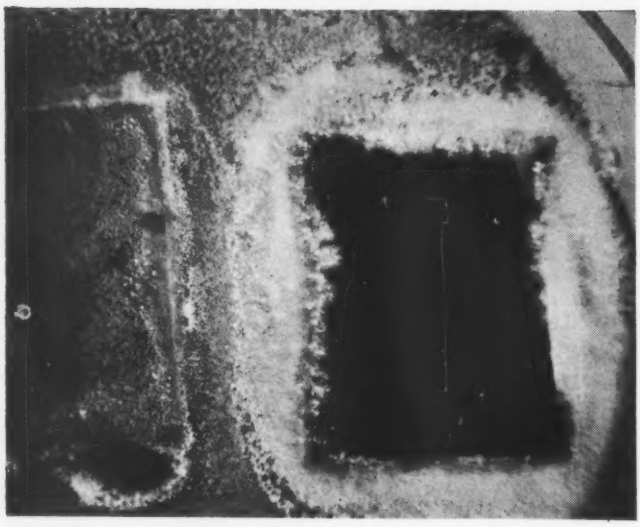


1—Photo was taken after 48 hours incubation of S-coated cellophane (left) and S-coated white wrapping paper inoculated with E. Coli and imbedded in nutrient agar. Clear zone outlining each sample (where the line pattern of colony counter under dish shows through) indicates sterility. Fog-like section is caused by densely packed bacterial colony. **2**—*Performance of S-coating on cellophane against molds and yeast. Two coated samples show no growth; third sample, not coated, is almost invisible at right.* **3**—*S-coated wrapping paper, inoculated, incubated and stored for a year, shows but few inhibited colonies as contrasted with ample growth in nutrient.*



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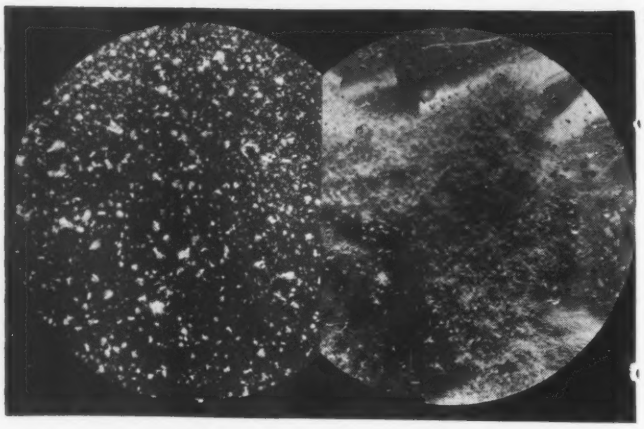

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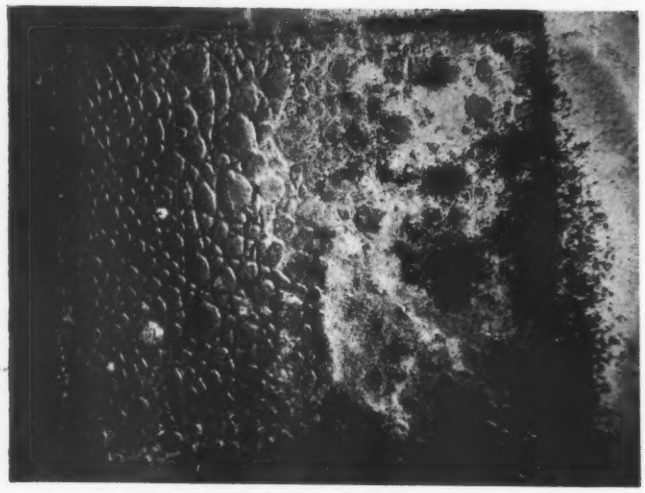

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4—Piece of cellophane on the right was S-coated and shows no growth of Metarrhizium; prolific growth resulted in the nutrient environment and on the control sample shown at the left. **5**—*Showing enlargements of sections (5X) of S-coated cellophane on the left and sections of uncoated cellophane on the right. Heavy inoculation with Penicillium and Aspergillus spores left treated sample relatively free from growth.* **6**—*Showing a contrast of mold growth on sample of artificial leather. The S-coated portion on the left shows practically no growth; untreated portion on the right shows ample growth.*

solution when contacted by aqueous liquids and are also in most cases undesirable from the standpoint of toxicity, taste or odor. It is also obvious that soluble materials in prolonged contact with moisture or aqueous liquids leach out and thus lose their potency.

A new way of accomplishing the aim of a self-sterilizing coating (S-coat[1]), without being subject to solubility in the strict sense of the term and subsequent depletion and without imparting taste, odor or toxic qualities to food materials contacted with it, has been developed by the application of "adsorption compounds" of silver on colloidal carbon.

The excellent qualities of colloidal carbon (carbon blacks, lampblacks and the like) for carriers of adsorption compounds is obvious because of the very large chemically available surface which these particles represent due to their minute size. (An ounce of colloidal carbon may easily represent a total area of twenty or more acres.) The adsorption affinity of carbon for oxygen lends itself to the provision of a practically indestructible supply of oxygen in the form of various surface oxidation states on the carbon particle. Colloidal forms of carbon, however, have no appreciable germicidal or mycocidal action per se.

On the other hand, it is well known that the ions of silver represent one of the most potent and least toxic germicides known, if they can be protected against reduction, since only in an oxidation state which can be maintained permanently can one rely on the "activity" of the metal. By extended experiments, methods have been found by which this state of silver can be produced and maintained, namely by absorbing the metal (probably in atomic form) on or within the oxidation layers of colloidal carbon particles.

Colloids of this type (which obviously have nothing in common with the well-known colloidal silver preparations) can be incorporated as pigments into suitable plastic binding materials and the materials so resulting can be used as coatings on paper, cellophane, pliofilm, metal foil, glass, etc. These coatings are dark in color by virtue of the carbon content of the pigment, although for some purposes the coating can be thin enough to permit a fair degree of transparency.

It lies in the character of adsorption compounds that the action of thin layers produced by such pigments can be adjusted according to the required performance. If a certain amount of initial leachability is necessary, it can be provided for, as demonstrated by Fig. 1, where a piece of paper and one of cellophane coated with a partially leaching S-coat were laid upon and partially submerged into a nutrient agar plate and subsequently heavily infected with *E. coli*. The growth after subsequent incubation shows a sterile zone outlining the shapes of the samples and permitting a quantitative measurement of the degree of leachability. Similarly it is possible to produce coatings which do not show any appreciable degree of leaching.

It is interesting to note that the permanency of the action of such coatings is very large indeed. The reason for this permanence is the following one: as already mentioned the atomic silver is only capable of afflicting living protein in the presence of oxygen atoms (i.e., in an oxidation state of the silver). It is also well known that none of the oxidation states of silver are, strictly speaking, stable, inasmuch as light, age and most organic materials always have the tendency to reduce silver and thus produce a state which is germicidally not any more active. The adsorptive attachment of

[1] The manufacture of and the patents covering S-coating are controlled by the Sterilite Products Co. The development of the packaging uses of this material is being done by the Shellmar Products Co., in Mount Vernon, Ohio.

the silver ions (or atoms) to the carbon surface which as such has the tendency to "reoxidize" itself very rapidly, appears to be able to prevent the reduction of silver and thus its inactivation as has been proved by storage tests of coated surfaces for a number of years.

The studies of the S-coats for packaging material have been chiefly directed toward the performance of such coatings against molds and fungi which produce spoilage and rot. Inasmuch as the normal tests for mold inhibition did not give satisfactory results, the following technique for coatings on paper and cellophanes was developed: the S-coated and control samples were folded over a small glass slide. These mounted samples were subsequently submerged into molten nutrient (Sabouraud's agar), temperature controlled so that a reproducible viscosity and surface tension could be obtained. (In the case of waxed control cellophanes, it was necessary to wash the wax coat off with petrol ether.) The dipping in the nutrient agar produced a uniform nutrient film on the slides. After it was hardened by cooling, the samples were laid in a Petri dish containing the same agar so that the samples had at the borders a continuous and wetting contact with the agar in the dish. The dish was subsequently heavily inoculated with spores from mold cultures of the varieties desired. The best method for applying a uniform spore inoculaton was found to be by brushing with a camel's hair brush over a culture, subsequently shaking the brush until a visible cloud of spores was produced and then to move the exposed surface of the dish repeatedly through this cloud. The dishes were then closed and incubated with an ample water supply to approximate saturated humidity at a temperature of 30 to 32 deg. C. Ample mold growth was in general observed after 48 hours, but incubation was continued for a much longer time.

Figs. 2, 3 and 4 illustrate the results obtained by this type of performance test of S-coats on cellophanes and papers against molds and yeasts.

Fig. 2 shows the performance of S-coating on cellophane as an inhibitor against molds and yeast. Three pieces of MSAT-83 cellophane, two of which had an S-coat (279-D) machine imprinted, were coated with a thin layer of nutrient agar. All three samples were mounted in a Petri dish containing nutrient agar. The contents of the dish had been heavily inoculated with *Monilia Nigra*, *Mucor*, *Penicillium* prior to five days' incubation at 30 to 32 deg. C. at saturated humidity. Prolific growth resulted as shown in Fig. 2 so that the control (uncoated) sample on the right side of the photo is rendered practically invisible. The coated samples show no growth.

Fig. 3 shows the performance of S-coating on wrapping paper as an inhibitor against mold attack after prolonged storage. A piece of S-coated paper (No. 236) was soaked in and mounted on mold nutrient agar and subsequently inoculated with various mold spores, incubated and then stored under varying conditions for one year. As shown by the photo, there were only a few inhibited colonies on the paper, but ample growth in the nutrient environment.

Fig. 4 shows the performance of S-coating on cellophane as an inhibitor against *Metarrhizium*. Two pieces of MSAT-83 cellophane, one of which had an S-coat (No. 283D), were coated with a thin layer of nutrient agar (Sabouraud). Both samples were mounted in a Petri dish containing this agar. The contents of the dish and the samples were heavily inoculated with *Metarrhizium* and *Aspergillus* and incubated for 10 days at 30 deg. C. and saturated humidity. Prolific growth resulted in the environment and on the control sample

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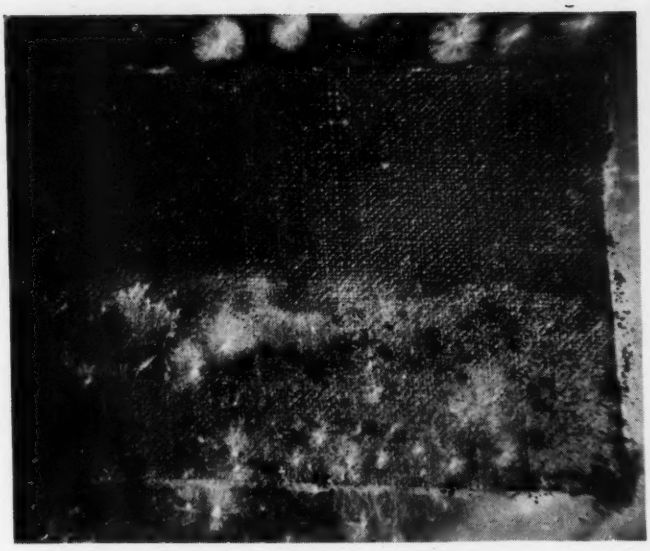

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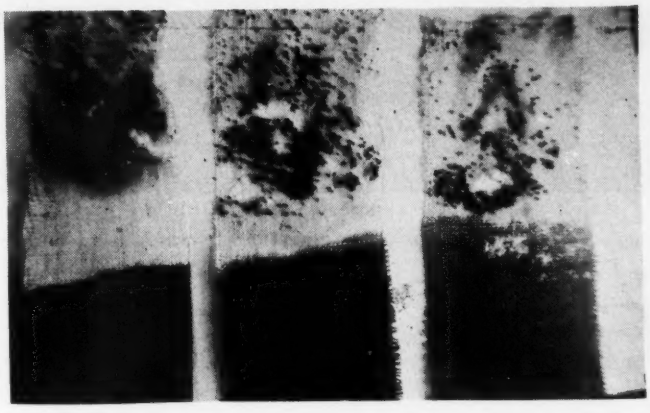

7—Prolific mold growth is shown on untreated lower half of laminated canvas section; S-coated upper half has almost no growth. 8—Resistance of S-coated cotton fabric to rot is indicated. Upper (untreated) halves of strips are easily torn with needle; treated halves retain strength. Note that protection of coating reaches a distance beyond border, depending upon weight of impregnation.

(left), whereas the treated sample (right) showed no growth and also a zone where the *Metarrhizium* was white (apparently due to the inhibition of its capacity to grow spores).

The general experience with coated and half-coated samples shows that after prolonged incubation the mold organisms extend hyphae over the coated areas but that these hyphae do not support new growth so that sporulation is absent.

This situation can be demonstrated by a particularly heavy inoculation with mold spores of normal and S-coated surfaces as shown in Fig. 5. The photos show enlarged (5 ×) sections of an S-coated cellophane (left) and uncoated cellophane (right). Both were coated with nutrient agar and inoculated with *Penicillium* and *Aspergillus* spores prior to 16 days' incubation at 30 to 32 deg. C. at saturated humidity. The uncoated cellophane (right) shows prolific mold growth, whereas the spores on the S-coated surface (left) apparently seem to have produced only what may be termed "frustrated" growth.

Figs. 6 and 7 show the performance on plastic-coated fabrics.

Fig. 6 shows one piece of artificial (*Continued on page 148*)

1—*Part of line of seven home-made machines which automatically weigh and fill a non-free flowing material.*

Filling by suction . . . an improvised method

An interesting approach to the problem of precision weighing and packaging a non-free flowing material is made in a home-made machine evolved by a New York City war plant. An assembly line using seven of the comparatively crude machines is credited with eliminating a health hazard, increasing production 600%, and saving $12^1/_2$% in materials.

When the Breslee Mfg. Co. recently secured a contract from the War Department to produce dummy propelling charges used in practice firing of the 105-mm. howitzer, they soon realized they had underestimated the difficulty of the weighing and packaging problem involved.

A dummy propelling charge consists of seven cotton bags loaded with finely powdered asbestos. The bags differ in size and must be packed with varying amounts of asbestos. The specified net weights range from $1^7/_{10}$ oz. to $13^1/_{10}$ oz.

The dust-like particles of powdered asbestos are a potential threat to the respiratory systems of the operators. To complicate the problem, the tackiness of the asbestos makes accurate weighing and filling by hand a tedious and lengthy operation. Gravity feed machines, which were available for immediate delivery, could not be used because the asbestos did not flow freely and clogged the openings of the feed tubes.

After weeks of constant experimentation, Breslee's research division, under the supervision of Arthur A. Gardner, designed and built its own novel assembly line consisting of seven vacuum packaging machines. These machines cleverly combine the use of suction with precision weighing.

Each packaging unit—which is piped into a master suction system—consists of an air-tight box, a balance scale with many small metal plates counter-balancing a hopper of asbestos and a plastic tube connecting the air-tight box with the hopper of asbestos.

The bags to be filled become the "lungs" of each suction machine. The fabric of the bag is sufficiently porous to allow the passage of air, but not porous enough to allow the asbestos to pass through. Breslee utilizes this fact by making each bag an integral part of its vacuum system.

The operation of filling the bag takes place within a specially constructed air-tight chamber approximately one foot square. This air-tight box can be opened on one side by a small sliding door.

The frame of the door is lined with sponge rubber so that an air-tight seal is formed when the door is moved to its closed position. When suction reduces the pressure within the box the atmospheric pressure on the outside of the box serves to hold the door snugly against the frame—thus eliminating the possibility of air leakage.

The operator places the empty bag in the air-tight chamber and firmly clamps it to a nozzle suspended from the top of the box. On the outside of the box the protruding end of the nozzle is connected to a flexible transparent plastic tube approximately 4 ft. long. The end of the plastic tube is held by the operator who guides it towards the hopper of asbestos resting on one side of the scale. To insure accurate weight measurements, a sensitive needle-point scale is used—accurate to $^1/_{16}$ of an ounce.

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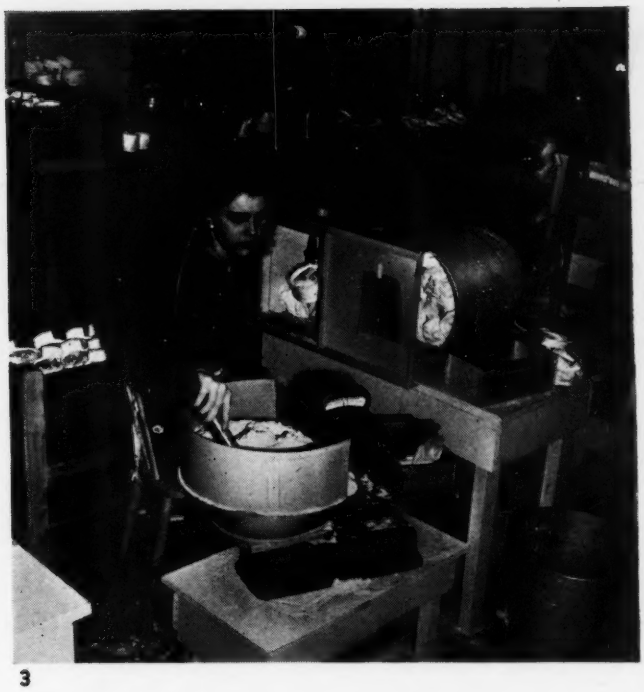

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2—Flexible Saran tube leads from filling box to hopper of powdered asbestos on scale. Metal plates, each equal to one filling, are stacked on opposite side of scales. One is removed to throw scale off balance. Box is closed and suction turned on by foot treadle. When scale pointer returns to zero, bag is accurately filled.
3—Machine from opposite side, showing box of weights to right of scale and air-tight door of filling machine.

On one side of the scale is a hopper filled with powdered asbestos; the other side of the scale contains several small metal plates, the total weight of which perfectly balances the asbestos on the other side of the scale. Each metal plate by itself represents the exact weight of the amount of asbestos required to fill one bag.

With the scale now in perfect balance, the operator removes from the weighted side of the scale a single metal plate, throwing the scale out of balance the exact amount of weight necessary to fill one bag.

The operator then inserts the mouth of the plastic tube into the hopper of asbestos and steps on a foot operated treadle which opens a valve connected with a turbin blower; the blower creates a vacuum in the air-tight box containing the bag—and this suction is relayed through the plastic tube so that asbestos is sucked from the hopper and deposited in the bag.

The operator watches the needle-point on the scale. As soon as the scale is in perfect balance she removes her foot from the treadle controlling the vacuum, and the flow of asbestos stops immediately. She then removes the loaded bag from the air-tight box, replaces it with an empty bag, removes a second metal plate so that the scale again is thrown out of balance the required amount, steps on the treadle and allows the plastic tube to suck in asbestos until she sees the scale swing back into balance. This process is repeated continuously.

Breslee's use of a transparent Saran tube has more than one advantage. Tests completed with metal tubes indicated that the metal walls resulted in surface adhesions far in excess of efficient operation, whereas the smooth inner walls of the plastic material resulted in practically no adhesions. Because the flow of asbestos is visible, it is easy for the operator to see whether the system is working properly.

It is interesting to note that use of an ordinary vacuum pump could not solve Breslee's problem because the material being handled required not only suction but also a large amount of air.

Breslee engineers estimated that their vacuum filling system required 450 cu. ft. of air per minute for every six inches of mercury vacuum, whereas most vacuum pumps sucked in only 150 cu. ft. of air to every six inches of mercury vacuum. They, therefore, installed a Spencer turbin blower powered by a $7\frac{1}{2}$ h.p. motor revolving at 3,500 revolutions per minute. This turbin secured the required vacuum pressure and also drew in 600 cu. ft. of air per minute, an amount more than sufficient for the efficient functioning of the vacuum assembly line.

This suction method of precision filling not only resulted in extreme accuracy but also achieved a far greater production than could possibly be accomplished by hand weighing and filling. Before the vacuum machines were in operation, an operator who manually weighed and filled each bag completed an average of 15 bags an hour or 120 bags per day. When the automatic suction machines were installed the operators averaged 125 bags an hour or 1,000 bags per 8-hour day.

Still more important, however, was the elimination of the hazard to health represented by the manual handling of the finely powdered asbestos. Now, because the asbestos is completely enclosed from the moment it leaves the scale, there is a minimum of dust particles in the air, thus removing a potential threat to the well being of the operator.

Finally, the system also saves asbestos as the loss of material is kept to an absolute minimum. On one lot of 40 tons of asbestos allotted for the job by the government, Breslee returned 5 tons—a saving of $12\frac{1}{2}\%$.

Because of the splendid results achieved with their vacuum weighing and filling machines Breslee's executives feel that there should be a place for it in the commercial packaging world. They welcome the opinion of technical men in the packaging industries, and invite suggestions as to possible new uses now and postwar.

Waterproof paper sealing

*by William H. Popp**

American ingenuity and skill have had to solve difficult problems on an enormous scale in shipping vitally essential goods to every corner of a world at war. The demands of our Armed Forces, Lend-Lease and the opening of markets previously supplied largely from Europe have necessitated the shipment of tremendous quantities of American goods to places and under conditions American shippers had scarcely even heard of before.

One problem of great importance has been that of protection against the elements. Army-Navy General Specifications 100-14A and 39P16a have proved invaluable, but the detailed methods of meeting these specifications have had to be worked out, often by trial and error, by each company for itself.

Considerable material has been published on how to pack goods—mainly implements of war—for the Armed Forces. But little has appeared dealing with the packaging and sealing of other types of material essential for military and civilian use. Yet this problem, though of less immediate concern, remains highly important today and will increase in importance with the end of actual fighting.

Methods worked out for the use of waterproof paper in sealing for export should be of interest, at least in offering suggestions, to other manufacturers and shippers.

In dealing with cartons, it is possible to wrap with waterproof paper which comes just to the top of the carton, or with paper extending half a carton's width beyond the top of the carton. In the first case, when the waterproof paper comes just to the top of the carton, the following steps are used:

1. Wrap carton in waterproof paper with 2-in. overlap. Seal at joint with 2-in. waterproof gum tape.
2. Cut a patch of waterproof paper to fit just on top of carton and place it on.
3. Apply 3-in. waterproof tape around top, allowing half of tape width to extend beyond edge of carton.
4. Fold *in* opposite sides of tape.
5. Fold *out* and down remaining two sides.
6. Apply waterproof tape over these last two, allowing half width of tape to come on top of carton.

When paper is used extending half a carton's width or more beyond the top of the carton, the method is as follows:

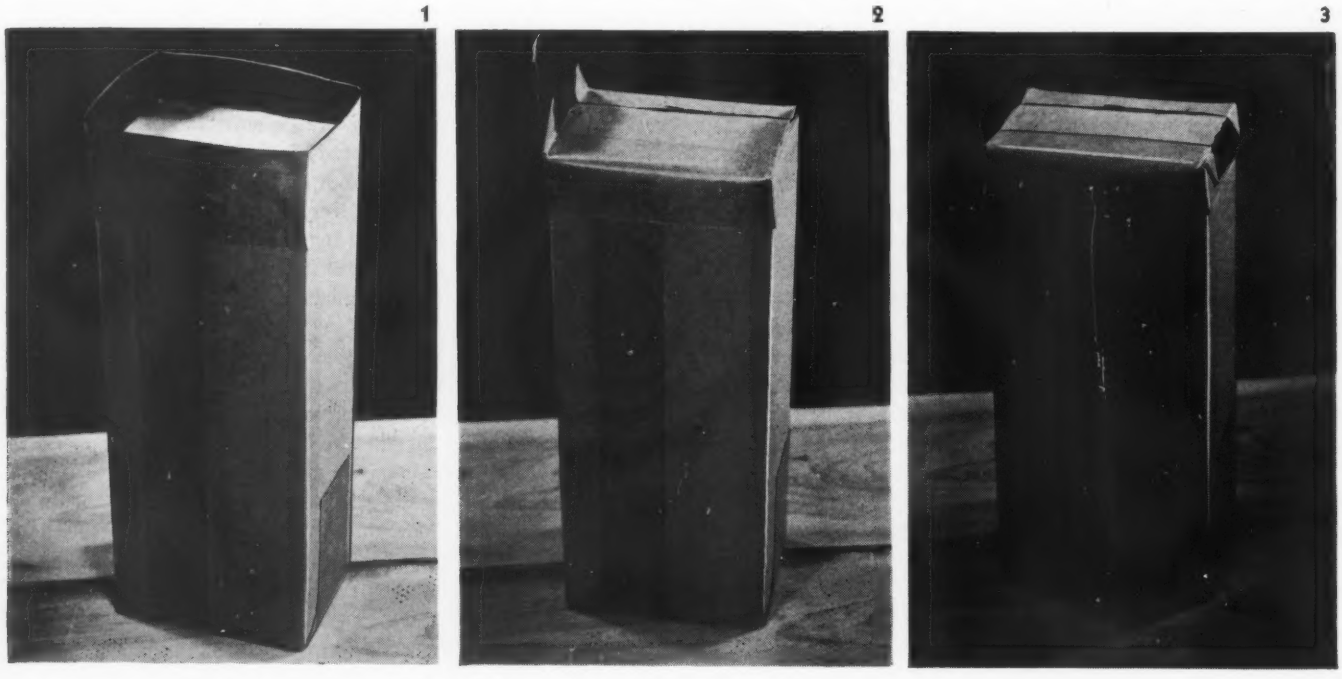
1. Wrap carton in waterproof paper with 2-in overlap. Seal at joint with 2-in. waterproof gum tape. Make joint on side with longest dimension.
2. Fold in two opposite sides of paper along the longest dimension of top.
3. Fold *out* and down the sides the two "dog ears."
4. Seal along entire seam with 3-in. waterproof tape making sure tape extends beyond point of "dog ear" to make tight seal at side.

Another use of waterproof paper is for case linings. Bags may be bought for this purpose, but only in quantities of one thousand. If a few hundred are required, it is good practice to construct a wooden frame and make the bags on that. The procedure is as follows:

A. Making wooden forms—

* Package Engineer, Kimble Glass Co.

1—When width of wrapping paper is same as carton's length, it is wrapped with 2-in. overlap, sealed with 2-in. waterproof tape. 2—Patch of waterproof paper is put on top of carton and 3-in. waterproof tape applied around edge, folding in as shown. 3—Ends of tape which stood upright in Fig. 2 are folded out and down.



Make form in shape of table—flat top with four sturdy legs, one at each corner.

1. The length and width of this form to be the same as inside length and width of the case.
2. The height to be the depth of the case plus $^3/_4$ of width.
3. The top is flat but should have holes (about $^1/_4$ in. diameter) to release vacuum when bag is being withdrawn from the form.
4. The corners are to be smooth and rounded so as not to catch and tear the paper.
5. There should be a flat board (about 6 in. wide) on one side and the two ends equidistant between the legs used as surfaces when joints are being sealed.

B. Making bags—

For best results two operators are needed.

1. (a) Length of sheet is to be twice length plus twice width of form plus 2 in. for overlap.
   (b) Width of sheet for quick bag making should be height of form plus half of width plus one inch for overlap.
   (c) It is also possible to use a width same as height of form.
   (d) If paper on hand isn't wide enough, then two sheets must be sealed together. Lay two sheets together with 1- or 2-in. overlap. Seal with either waterproof gum tape or asphaltum.
2. (If a large number of bags are needed, it will be quicker to make ready several sheets in advance before starting on step 2.)
   Wrap sheet snugly around form so that the ends will overlap at the longest side having flat vertical board. Seal at this point with 3-in. waterproof gum tape.
3. Bottom of the bag is made on top of form while sheet is around the form.
   (a) If Step 1 (b) width is used, make bottom as shown in second method above.
   (b) If Step 1 width is used, make bottom as shown in first method above.
   (c) If sheet is of width between step 1 (b) and step 1 (c), make bottom as follows:
      I. Cut patch of waterproof paper which will fit on top of form. This patch need only be large enough so that there will be an overlap of main sheet when it is folded down.
      II. Fold down two opposite sides of main sheet and apply asphaltum at corners indicated by X.
      III. Fold down other two sides and apply 3-in. waterproof gum tape over joints, making sure tape adheres thoroughly.

C. Removing bags from form—

1. While bag is still on form all edges should be creased.
2. Operator at each end grasps bag at each corner and slowly lifts it off the form.
3. Just before bag is completely off the form each operator should start a fold by pushing in the end a little.
4. Pull bag completely off the form and lay it on top. Finish folding in the ends, keeping edges lined up. Then fold down bottom. An air pocket may be formed in this last fold, but this proves your seals are tight. Fold bottom down firmly forcing out towards top of bag.
5. Bag can now be laid aside for either immediate or future use.

When such a small quantity of bags is required that it would not be economical to make a form, the following method may be used:

1. Cut a patch of waterproof paper, length to be

***4**—Strips of waterproof tape are applied over ends folded down, with half the width of tape over top of carton.* **5**—*Wrapping with paper extending half the carton width over top, two opposite sides of paper are folded in along longest dimension.* **6**—*"Dog ears" in Fig. 5 are folded down and out; seam is sealed with 3-in. tape.*

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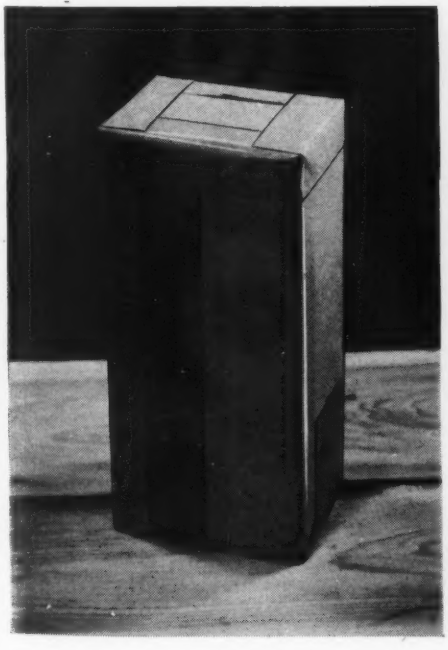

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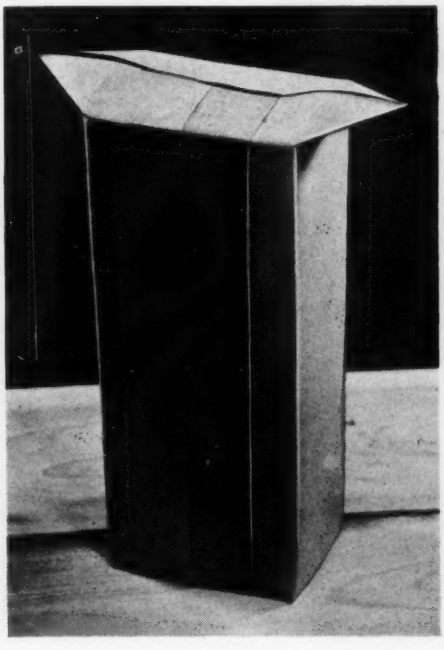

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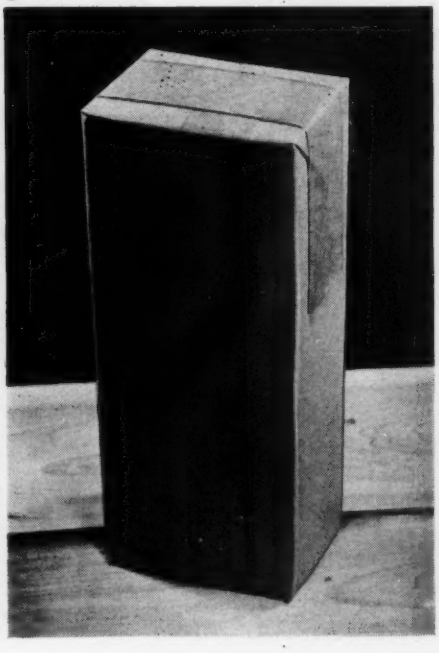

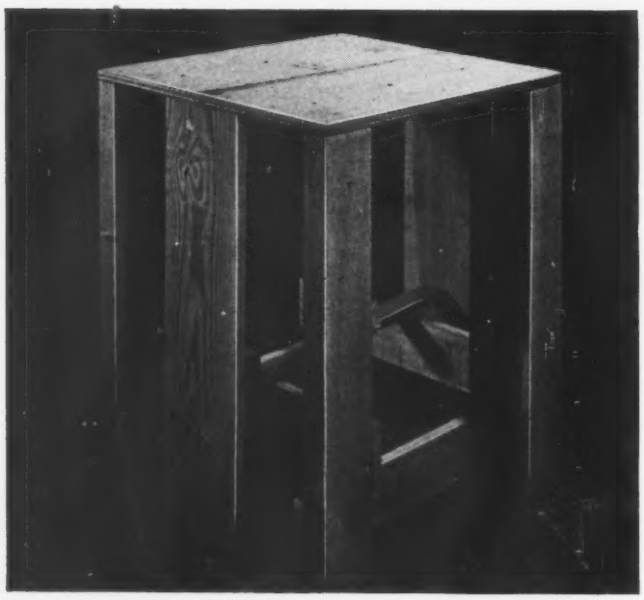

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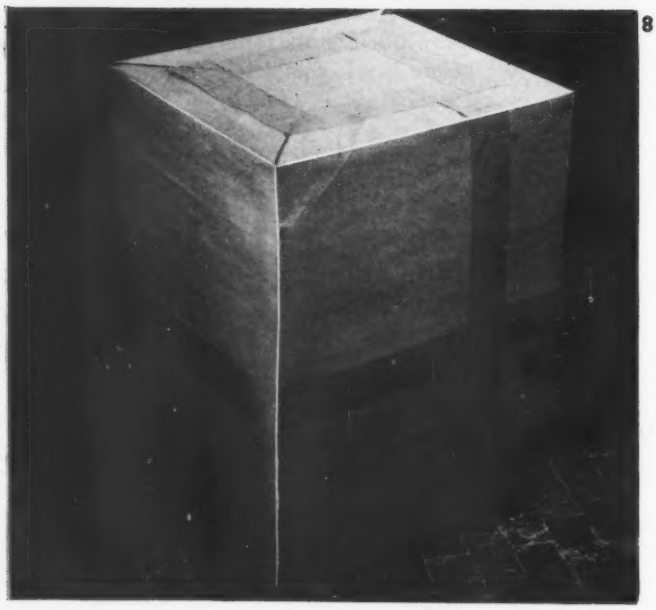

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length of box plus 4 in. and the width to be width of box plus 4 in.

2. Fit this into bottom of case so that 2 in. of paper extend up each side and each end.
3. For sides of case cut sheets of waterproof paper length of which should be twice length of case plus twice width of case plus 2 in. The width of sheet should be depth of case plus $^3/_4$ width of case. The width can also be as narrow as depth of case plus 2 in.
4. Apply asphaltum* along entire edge of 2-in. lap extending up from bottom sheet (see step 2).
5. Stand up sheet (made in step 3) in the case and press the bottom edge firmly against the asphaltum applied along edges of bottom sheet. Watch corners particularly.
6. Apply asphaltum where two ends of sheet meet.

After the bag is inserted in the case and ware packed, there are several methods which may be used for sealing the closure:

A. Using asphaltum—

1. Fold in one side at longest dimension. Apply asphaltum along entire edge of this fold.
2. Fold down opposite (*Continued on page 154*)

* Waterproof gum tape may be used in place of aspaltum.

***7**—Wooden frame for forming case liners may be constructed as shown. Flat boards on sides aid sealing of joints.* ***8**—Completed case liner. Asphaltum is applied at corners and all joints are sealed with 3-in. waterproof tape.* ***9**—All edges should be creased while bag is still on the form; then it can be removed by grasping at corners and slowly lifted off form. Fold is started.* ***10**—After bag is inserted in case and case packed, bag is folded in along one side at longest dimension. Asphaltum is applied along entire edge of this fold. Opposite side is then folded down and pressed firmly, dog ears are folded in and lid is nailed on box ready for shipment.*

10

EASTMAN ACETATE SHEET can be scored, folded, pleated, molded, or drawn. It can be sewed, crimped, or stapled and it takes printing inks without wrinkling. Three standard types of Eastman Acetate Sheet are produced in sheets or rolls: Clear Transparent, Matte Translucent, Colored Translucent. Right now, of course, all production of Eastman Acetate Sheet is devoted to essential war needs. But it will be again available for civilian use . . . and you'll want to include it in your postwar packaging and production program. For detailed information, write to the Chemical Sales Division, Eastman Kodak Company, Rochester 4, N. Y.

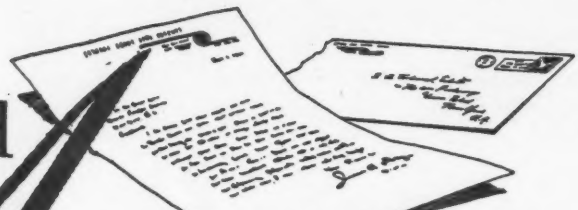
Get a head start in postwar products and packages

TO be ready for swift conversion to peacetime products and packages, you may wish to send some of your staff to the Kodak Packaging Laboratory for a refresher in fabricating operations. Kodak experts will be on hand to help.

Eastman Acetate Sheet

attracts
protects
sells

QUESTIONS and Answers



This consultation service on packaging subjects is at your command. Simply address your questions to Technical Editor, Modern Packaging, 122 East 42nd St., New York 17, N. Y. Your name or other identification will not appear with any published answer.

Sifting in small containers

QUESTION: We are manufacturers of a drug product which is packaged in a small folding carton with a liner and a dispensing device. The carton is overwrapped with cellophane. The carton size is approximately 2 in. high, 1 in. wide, and 3/4 in. deep. The product is a finely divided, dark colored material and we have had many complaints from our dealers on the unattractive appearance of these packages after some of the powder has sifted into the space between the wrapper and the carton.

ANSWER: A small folding carton of this size with a dispensing or pouring device and a liner is a very complicated structure to make entirely siftproof, especially in such an extremely small size. Since the carton is complicated in construction because of the siftproof feature, it will not be possible to make it entirely resistant to sifting of the product. Probably the easiest answer is to improve the tightness of the carton liner to stop sifting at this point. This could be accomplished by more workable and more easily formed liner material, improvements in the operating characteristics of the adhesive and machine adjustments to obtain a maximum uniformity and precision of operation.

Even if you cannot accomplish complete elimination of the sifting by these changes, the degree would be reduced.

After making the liner as tight as possible, a small amount of sifting may still occur. This can be made less noticeable by using a dark band printed around the bottom of the carton. This would have the effect of reducing the visibility of the small dark particles, since they would eventually settle to the bottom of the liner. Another possible answer would be the complete revision of your production equipment to package this product in small heat-sealed individual packets.

Packaging natural cheeses

QUESTION: In South America my father has left me with a large dairy business. In modernizing our merchandising program, we are planning to package natural cheese on the premises and would like to package it in small units, similar to the small foil-wrapper packs of Swiss gruyers, camembert, roquefort —wedge shaped to go in round boxes. Can you tell us about the packaging materials and equipment we should use?

ANSWER: There are a large number of packaging materials which are suitable for the packaging of cheese in the manner which you describe. A partial list of these would include metal foils—plain, laminated, or coated; certain grades of cellophane, either as single sheets or laminated to itself; and also special coated papers, such as parchment or other wet-strength sheets with moistureproof coatings.

Since wrapped segments do not require any heat-sealing coating, I suggest that you try sample packs of aluminum foil in various weights and cellophanes of the types recommended by the manufacturers for moist products.

From these two materials, you will be able to determine quickly which handles most satisfactorily as a wrapper and which gives the best protection under your conditions of storage and merchandising.

Until you have decided upon the type of wrapper, you should not attempt to buy or develop wrapping equipment, but you should start on a hand packing operation. After suitable experience, you can then contact various machine manufacturers for equipment to handle your product.

Holder for dipping apples

QUESTION: With reference to the article appearing in MODERN PACKAGING, *July 1939, "They 'Dip' This Package." We have been experimenting with such a process but are unable to coat the apples completely because of our inability to make holders to allow the fruit to be covered completely with the coating. Can you suggest any means by which we can obtain a continuous coating on the apples?*

ANSWER: Unfortunately, we do not have complete details on the type of holder used in this dipping process. However, it would appear that holders made, using springs and engaging the apple in the depression at the stem and flower end, would enable you to achieve continuous coating on the fruit.

The two points of these should be limited in area and rather blunt, and the spring tension should be controlled to allow the operator to insert the apple and not be sufficiently strong to pierce the fruit. In all probability, a special type of holder should be devised for each kind of fruit, but, in general, spring holders with limited points of contact could probably be devised for different products.

Protection for vitamins

QUESTION: We are planning to repackage our vitamin products after the war and are looking for a new type of container that will give the best kind of protection. We have been considering metal containers—vacuum packed. Can you tell us if any studies have been made to show that such packaging would give better and longer protection to vitamin potencies?

ANSWER: All vitamin concentrates are susceptible to deterioration by light, heat, moisture and oxygen. The rate and the degree of deterioration or loss in potency depends upon the particular vitamin, its concentration, and the protective action of stabilizers and added materials.

A well vacuumized metal (*Continued on page 156*)

FIRE WARDEN AND SPACE SAVER!
...a dual job for Mr. Cellophane

THIS IS AN ELECTRIC CABLE. Inside are wires wrapped with Sylvania cellophane. This cellophane is both flame-retardant and space saving. The reason it conserves space is because it is extremely thin. And on this vital job, Sylvania cellophane performs three other essential duties: 1. Separates the component parts of the cable. 2. Acts as a coding device—different colored cellophane indicating different strands of the cable. 3. Aids in insulation.

The versatility of Sylvania cellophane makes it indispensable for war. However, the developments Sylvania is making today will profit you well in the postwar tomorrow. They will result in more uses for cellophane . . . and a better cellophane.

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SYLVANIA CELLOPHANE

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WASHINGTON REVIEW

by R. L. Van Boskirk

● **Hottest Topic**—During Washington's sultriest week, the drive by the Armed Forces for continued emphasis on war production was the most talked of subject. Headed by Lieut. General Brehon Somervell, Government procurement officials laid down a heavy barrage attacking the production lag. Overseas requirements, greater now than ever, call for continued consumption of packaging materials of all kinds. "Our biggest demand will come on the day Germany surrenders, then we can begin to use our total supplies against Japan and begin curtailment of production."

Though the Armed Forces obviously have no place in their lexicon for the word reconversion, other Government officials see no reason why problems both of war production and reconversion planning cannot be handled at the same time. Congressional leaders of both parties, during this same hot week, demanded that Congress should reconvene to finish up its plans for reconversion.

● **Disposal of Surplus Products**—Meanwhile other departments of the Government are perfecting the details of what appears to be a well-conceived plan for disposing of Government-owned surplus stocks. The plan is of particular interest to the packaging field because much of the surplus stock is in the form of packaged merchandise. Any irregularities or irresponsible measures in returning this merchandise to civilian channels for distribution could result in hardships for producer and distributor without any particular lasting benefit to consumers.

Two basic principles have been adopted with a view to avoiding these difficulties: (1) Every effort shall be made to obtain the maximum price for the commodity concerned. (2) The procedure shall be conducted with an eye to minimum disturbance of regular distribution machinery.

As far as packaged foods are concerned, officials of the Grocery Manufacturers Assn. have expressed themselves as feeling confidence in the soundness and fairness of the plan.

Government officials point out that probably no single procedure can be devised which will be followed in all cases. Likewise, they say, if a procedure is followed once it does not mean that that will be the pattern for all future cases. Determining factors will be (1) nature and quantity of the commodity, (2) its locations and condition, (3) the state of the market.

At present, as everyone knows, a seller's market obtains in practically all fields. Consequently, the current practice in some instances is to offer the commodity first at ceiling prices to the company who supplied it, with allowances for trade discounts, re-labeling and re-packaging expenses. After this offer if any quantity remains it is offered on the same terms to other processors or vendors. In either case information about these offers is promptly released to the trade and the public.

This procedure, it should be observed, utilizes as far as possible the normal distribution machinery of industry to reabsorb products in civilian markets. It also places a certain responsibility on the industry itself for getting commodities back into civilian channels with least disturbance of established markets. In some instances it is even possible to use the services of established food brokers.

If a product is not in condition to be reabsorbed for sale in customary outlets it may be possible to recondition it or use it in producing another product. (For example, evaporated milk could be disposed of to ice cream manufacturers without repackaging for the retail outlets.) Offers of such products are made to industries that can use the commodities. Negotiations may be direct or on the basis of competitive bids. If the circumstances seem to indicate it, bids or negotiations may be limited to specific regions or trade groups.

Under the existing laws the Government makes certain purchases in line with the price support program. Sales to original producers in such cases are obviously out of the question. Here, sales for industrial uses are in order, and in some instances products may be held and stored for a more favorable market.

Officials regard it as important to keep the procedure flexible and to aim at the following objectives: (1) prompt and orderly movement into civilian trade channels, (2) as little disruption of established markets as possible, (3) protection of the Government's investment in the product, (4) full information and adequate notice to all interested trade factors.

● **Packaging Machinery**—Priorities Regulation No. 24, outlining current procedure for placing unrelated orders, apparently will have little effect as far as immediate relief is concerned. WPB's Machinery Section points out that machinery manufacturers have too big a backlog of unfilled orders and their fervent hope is that those needing machinery will try to continue to hang on and make out somehow without any urgent pressing of claims, regardless of their needs.

The statisticians in WPB receive presumably accurate and regular reports from machinery manufacturers, current installments of which preclude very much in the way of civilian production. Indeed, PR No. 24 provides especially that the filling of any such orders must not interfere with war or essential civilian production. Apparently, unrated orders placed now are merely tantamount to taking a number in a crowded barber shop, for PR No. 1 which is still in force provides that all rated orders must be filled prior to unrated orders.

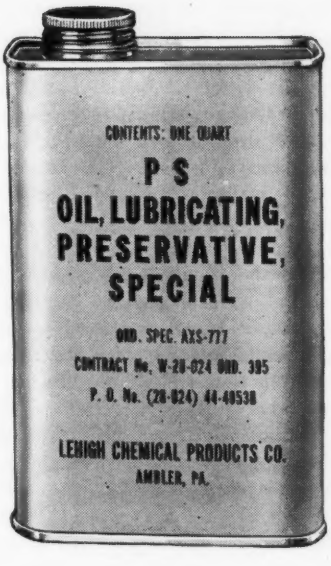
● **Relaxation Beginning?**—The "Spot Authorization" plan is hedged about with so many provisos that there won't be any grand rush into civilian production. Donald Nelson won a moral victory, but not even the most reactionary industrialist wants to limit production of military supplies. "You can't plan it," said General Somervell, "so that the last bullet kills the last Jap." Nevertheless, the American business executive can handle two jobs—he can keep on making bullets with both hands while drawing up future plans in his head. WPB's essential list includes about 125 items which are critically short. If a manufacturer can make them without interfering with the war effort, well and good—provided he doesn't tie up manpower needed elsewhere and provided also that he has the raw materials on hand with which to make them.

Without much fanfare there has been some relaxation of WPB Orders going on for some time. Recently the Point of Purchase Advertising Institute issued two

You can't coddle machine guns or airplanes in the field! Mud and sand . . . rain and snow . . . are the regular routine on the front line . . . and American lives depend on keeping them in action.

Lubricating Oil for machine guns and airplane instruments . . . packed by the Lehigh Chemical Products Co. of Ambler, Pennsylvania . . . travels right up to the battlefront in cans supplied by Crown.

Just one more example of the way in which Crown is bending every effort to provide containers for every need of our fighting men while keeping production on the highest possible level for the essential packaging requirements of the home front!



CROWN CAN

CROWN CAN COMPANY • NEW YORK • PHILADELPHIA • Division of Crown Cork and Seal Company, Baltimore Md.

bulletins listing between 80 and 90 WPB Orders, issued since the first of the year, announcing relaxations of control orders on materials and manufacturing.

● **Controlled Materials Plan Still Potent**—Interesting is this forward look of W. C. Skuce, Director of Controlled Materials Plan Division: "We have also considered how the Controlled Materials Plan may be related to the problems that will be brought about by spotty unemployment that will develop when contracts are terminated. Procedures have been developed which, if used, will permit the authorization of civilian production in such a manner that it would not interfere with military production, but would stabilize employment and would have the effect of gradually unwinding existing controls in an accountable fashion so that when these controls were no longer needed, as evidenced by the actions taken, they could be discontinued."

Mr. Skuce, whose background is assurance of his thorough understanding of the industrial point of view, made this succinct summary to a MODERN PACKAGING representative: "Here are four unsound ideas in the public mind that ought to be removed.

"1. They think the war is over. It isn't.

"2. They have a fear of a super-duper plan. We haven't any such thing.

"3. On the other hand, some people look to us for a divine panacea. We haven't any.

"4. They think the Government isn't looking ahead for what's coming. It is."

● **Aluminum**—Not too intelligently disseminated have been various bits of information about the lustrous metal. When WPB's July 3 order released sheet aluminum to can makers for "experimental purposes," newspaper writers wrote glowing headlines, "Housewives soon to buy food in aluminum cans"—which may be true or not depending on how one interprets the word "soon." Matter of fact, the 7,000,000 lb. released—3500 tons—wouldn't go very far in providing packages for the 16 products permitted. Can companies engaged in the actual experimental work say it will be several months before they can be tooled up for actual operations. Smaller can companies who have made specialty metal containers will probably reap principal benefit from this aluminum grant. Summed up thus by one prominent man in the industry: "It's an indication of what we hope will soon be a fact—that aluminum is no longer a strategic metal and should be released for non-military uses."

Relaxation of aluminum will ease up the closure situation, as—under the L-103-b Amendment and special amendment to the aluminum order—unlimited use of aluminum and blackplate rejects is permitted for closures.

● **Revised Joint Army-Navy Specs**—In process for some time has been the new edition of Army and Navy specifications. Result of the joint efforts of various branches of the service working with such agencies as WPB's Container Coordinating Committee, the aim has been primarily to make the specifications more flexible and easier to understand. The new list will cover much the same ground in No. 100–14A (same as Navy 39P16a), to which have been added detailed requirements regarding moisture-vapor-proof barriers, greaseproof barriers, uses of plywoods and wood-cleated fiberboard boxes. The booklet will also contain new waterproof paper specifications and more details on uses and re-uses of container materials as well as requirements for nailed wood boxes.

The booklet will be available for the use of any Army or Navy contractor or subcontractor and may be obtained on application to the Quartermaster General of the Army or to the Navy's Bureau of Supplies and Accounts.

● **Paper Continues No. 1 Shortage Material**—Possibility of complete priority control of paper by WPB was forecast by Rex W. Hovey, Director of the Paper Division, unless the entire industry voluntarily cooperates in producing military and essential civilian papers.

Pulp Allocation Chief Graham warned that mills filing reports late would risk not being included in the regular allocation.

Amendment to L-239, forecast in this column last issue, finally appeared late in July. This was just a further tightening of the belt on folding and set-up boxes. Manufacture of boxes for packaging and display purposes is prohibited unless they are made without display features that require additional paperboard. Empty boxes are forbidden. Combination boxes (containing two or more different articles) are forbidden except on written permission from WPB. Extension edges, tops or bottom cards, or padded tops are forbidden if they require extra paperboard. M-380, issued recently, prohibits use of moisture-vapor barrier materials except for packaging parts and equipment for the Army and the Navy. Order includes foil-and-paper laminations with or without textile backing.

Despite the constant harping on the acuteness of the paper shortage, however, book publishers are finding it possible to obtain extra paper. One even borrows against his 1945 consumption quota. In cheerful contrast with this is the Commercial Printing Industry Advisory Committee's pledge of cooperation in conserving print paper and in salvaging waste paper. Helpful note is the announced intention, on the part of WPB's Printing and Publishing Division, to limit printing paper for use by federal, state, county, municipal and local governments. Tighter restrictions have been put in force on use of paper cups, food containers, milk bottles and other sanitary food containers. Several violations are under investigation.

Re-use is more essential than ever. V-Box program for overseas shipment is still the No. 1 consumer with little or no prospect of salvage or re-use. This means that the home front must continue those practices more vigorously than ever.

New amendment to L-317 (Fibre shipping containers) represents more of clarification than added restrictions.

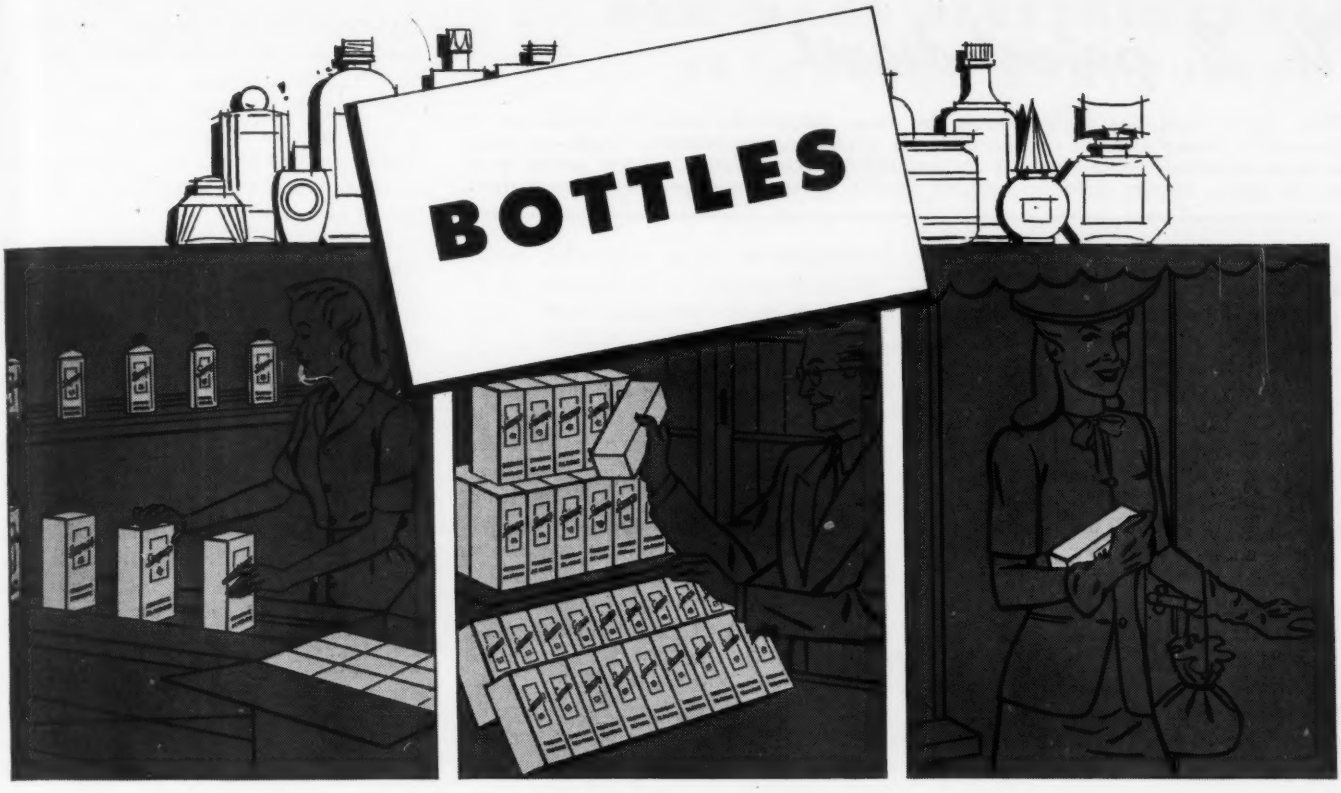
● **Glass Problem Solved**—Amendment to L-103-b (Glass Container and Quota Order) has been liberalized to permit considerable increased use. Certain foods are restricted to 100% of their use in the base period; tooth powder, oral antiseptics, ointments, laxatives and related items are granted unlimited use. Chemicals, cosmetics and toiletries retain previous packing quotas, but are allowed unlimited use of aluminum and blackplate rejects for closures.

● **Tin**—The stockpile is decreasing while wartime demands continue to go up, says Erwin Vogelsang, WPB's Director of Tin and Lead Division. This makes salvage of used tin cans an urgent need.

● **Personnel**—Fred W. Gardner resigned as Director of the General Industrial Equipment Division and is succeeded by William M. Haile of the Linde Air Products Co. Henry G. Boon returns to Kimberly-Clark Corp., giving up the Assistant Directorship of WPB's Paper Division. Now in charge of the boxboard and cartons branch of the Paperboard Division is A. B. Huyssoon of the Continental Paper Co., succeeding Ralph A. Powers, who returns to his post with the Robertson Paper Box Co.

Significant plea to his industry was sounded by William W. Fitzhugh, president of the Folding Paper Box Assn., asking for cooperation in supplying first-class personnel for WPB. His plea makes two important points: (1) "The men from industry who are serving in WPB cannot be expected to stay there forever . . . replacements must be found." (2) "It is unfair for us as an industry to criticize WPB action unless we are prepared to supply the kind of personnel which may be expected to develop intelligent programs."

● **O. P. A. Abandons A. M. A. Grades**—When the Controller General informed O.P.A. that in the 1944 Second Deficiency Appropriation Act Congress had taken a definite stand against A. M.A. standards, the price fixing body issued an order eliminating mention of those grades from Foods Products Regulation No. 1.



ARE SAFEST—DISPLAY AND SELL BEST IN

• • • FOLDING CARTONS

Bottle users put protection first in folding carton advantages — but remember, too, the values in rectangular containers — such as less shipping space — smaller unit counter space — more efficient shelf display and stacking. From the sales angle you'll approve the large, visible label — the easy to wrap and carry feature — the bright, distinctive identity.

Bottles in folding cartons of Ridgelo Clay Coated Boxboard gain in appeal from manufacturer to consumer. Weigh the cost too—and plan on a profit-making change to Ridgelo quality in your folding boxes.

KEEP DOING YOUR SHARE IN THE WASTE PAPER CAMPAIGN

Ridgelo
CLAY COATED
BOXBOARDS
Make a lot of difference—FOR A LITTLE
MADE AT RIDGEFIELD, N. J.
BY LOWE PAPER COMPANY

Representatives: Bradner Smith and Company and Mac Sim Bar Paper Company, Chicago • H. B. Royce, Detroit
Gordon Murphy and Norman A. Buist, Los Angeles • A. E. Kellogg, St. Louis • Philip Rudolph & Son, Inc., Philadelphia

U. S. patent digest

This digest includes each month the more important patents which are of interest to those who are concerned with packaging materials. Copies of patents are available from the U. S. Patent Office, Washington, at ten cents each in currency, money order or certified check; postage stamps are not accepted.

COLLAPSIBLE CRATE. E. F. Costigan, Milwaukee, Wis. U. S. 2,350,673, June 6. The combination with a receptacle having a lid, of similar means at each end of the lid for locking the lid in position, each of said means including a metallic strap member pivotally hinged at one end to the lower edge of one end of the lid, equipped with notches and lever members which hold the arms in retracted position to engage the hooks in the respective notches.

AUTOMATIC BAG PACKAGE MAKING AND FILLING MACHINE. M. Allatt (to Millie Patent Holding Co., Inc., of New York). U. S. 2,350,333, June 6. Machine equipped with turn table carrier having pairs of moving fingers for receiving from below the level thereof sections of tubular bag material, means for actuating the fingers to releasably retain the bag sections in a depending position, a sewing machine for continuously applying interconnected bottom closure seams on the bag sections.

APPARATUS FOR PRODUCING FILLED PACKAGES. N. S. Ross (to Pneumatic Scale Corp., Ltd., Quincy, Mass.). U. S. 2,350,418, June 6. The combination with container filling means for cutting the uncut top closing flaps of the container substantially down to the level of the material after the container has been filled.

CASE PACKER. W. D. Kimball (to Standard-Knapp Corp., Portland, Conn.). U. S. 2,350,560, June 6. Machine equipped with supply table, guiding devices for directing cans in a plurality of parallel lines, and means for advancing cans to a charge-forming table and guided in alignment with guiding devices to permit cans to move laterally off the table.

MACHINE FOR PACKAGING GUM. J. Van Buren, Brooklyn, N. Y. U. S. 2,350,567, June 6. In a wrapping machine, a pocket, means for moving a plurality of articles and a wrapper into said pocket with the ends of the wrapper projecting from the pocket.

TAPE ROLL & CORE. C. B. Sampair & E. C. Lund (to Minnesota Mining & Mfg. Co., St. Paul, Minn.). U. S. 2,350,369, June 6. A roll of tape wound under tension upon a permanent cylindrical core having a relatively rigid inner portion which maintains a substantially constant internal radius.

APPARATUS FOR OPENING AND FILLING BAGS. C. H. Hartman, E. A. Marsh & N. E. Dorrington (to St. Regis Paper Co., New York, N. Y.). U. S. 2,350,554, June 6. Apparatus for opening and filling bags comprising vertical guide members, a bag clamp movable vertically to said guide members and adapted to clamp the top of a bag, bag opener members attached to the clamp at their upper ends, fitting between the guide members, and bent to a common center at their lower ends.

MACHINE FOR USE IN THE MANUFACTURE OF CARTONS. W. T. Martin (to Beech-Nut Packing Co., Canajoharie, N. Y.). U. S. 2,350,690, June 6. A machine for use in the manufacture of cartons, each carton comprising a bottom wall and vertical side and end walls.

BAG-CLOSING DEVICE. M. A. Nicolas (to Consolidated Packaging Machinery Corp., Buffalo, N. Y.) U. S. 2,350,694, June 6. An adhesive handling apparatus, which by means of fingers automatically seals bags.

SHEET FEEDING MECHANISM. E. G. Rider, Philadelphia, Pa. U. S. 2,351,367, June 13. A sheet feeding mechanism comprising a strip of material having a surface coated with adhesive, and means for delivering sheet which is picked up by adhesive strip.

CONTAINER & CLOSURE THEREFOR. H. Carew (to Dixie Cup Co., a corp. of Delaware). U. S. 2,351,318, June 13. In combination with a container having an outwardly directed bead around it normally open, a paper closure cap, said cap including a top portion and a depending flexible expansible flange having an outwardly directed bead formed around its bottom edge.

MOLDED BARREL-SHAPED CONTAINER. E. A. Anderson, Chicago, Ill. U. S. 2,351,387, June 13. A molded barrel-shaped container formed of two parts, one of said parts constituting one third of the barrel and the other part two thirds —both parts being cement sealed.

CARTON. G. K. S. Ferguson (to The Baltimore Paper Box Co., Baltimore, Ohio). U. S. 2,351,417, June 13. A fibreboard carton comprising a bottom from which extends side walls converging upwardly from the bottom to the top of the carton.

CARTON. R. W. Vergobbi (to Pneumatic Scale Corp., Ltd., Quincy, Mass.). U. S. 2,351,165, June 13. A carton formed from thin, flexible board stock comprising a body portion of generally rectangular shape provided with a flap joined thereto along fold lines and formed as an extension of each panel.

CARTON. R. W. Vergobbi (to Pneumatic Scale Corp., Ltd., Quincy, Mass.). U. S. 2,351,166, June 13. A carton formed from a relatively thin and flexible board stock comprising a body portion of general rectangular shape provided with a flap joined thereto along a fold line and formed as an extension of each panel.

LUGGAGE BOX. G. T. Henderson & N. A. Ringholz (to The Hinde & Dauch Paper Co., Sandusky, Ohio). U. S. 2,351,207, June 13. A one piece fibreboard container comprising a back tray composed of a back wall and top, bottom and end walls joined to the top, bottom and end edges of the back wall, said top and bottom walls having integral tabs and end walls having interlocked flaps.

CONTAINER FOR MATCH BOOKS & THE LIKE. E. A. Allen (to The Diamond Match Co., New York, N. Y.) U. S. 2,351,469, June 13. A container for match books and the like having a corresponding cover design, said container embodying body and lid portions composed of paperboard or similar flexible material.

CONTAINER & CONSTRICTING RIM. H. L. Carpenter, Brooklyn, N. Y. U. S. 2,351,848, June 13. A container comprising a body, a head fitted into said body, and a metal clamping rim formed with overlapping ends and divided at one point said rim having a pressed-out loop adjacent one of said overlapping ends.

CONTAINER. H. Sebel (one-half to A. H. Parker, Lexington, Mass.). U. S. 2,351,550, June 13. A container having a body portion having an open upper end and formed with a relatively short neck of reduced diameter.

CAPPING MACHINE. H. Mair (to The Distillers Co., Ltd., Linden, N. J.). U. S. 2,351,348, June 13. In a capping apparatus, a container support, a capping head above the container support, an electromagnet including an armature connected to the capping head to move the latter in capping direction.

CAPPING MACHINE. H. Mair (to The Distillers Co., Ltd., Linden, N. J.). U. S. 2,351,349, June 13. In a capping machine, a container-support, a vertically reciprocable capping head above said support, pressure means for moving said support, and means for effective action against said pressure.

HOW MANY BLUEPRINTS FOR PACKAGING PERFECTION?

DESIGN is more than getting down a lot of mechanically accurate lines on a drafting board . . . much more. Clear, original creative thinking must direct every line. Design that is merely adequate for the work to be accomplished has no place at Pneumatic. . . . The design for such a machine is simply a blueprinted step toward Pneumatic's goal of *design perfection* both in automatic packaging and bottling.

Designing at Pneumatic is at once *easier* and *harder* than elsewhere. Easier, because of the crystal-clear objective: package perfection and *lower cost per container*. Harder, because this goal is an ideal, and such an industrial ideal leads on forever . . . to progressively finer achievement.

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PNEUMATIC

PACKAGING & BOTTLING MACHINERY

DOUBLE PACKAGE MAKER. *One of Pneumatic's outstanding set of machines — it produces a filled and securely sealed "package within a package" at speeds ranging from 60 to 70 packages per minute.*

LOWER COST PER CONTAINER

PROCESS OF LAMINATING FILMS. G. D. Mallory (to Wingfoot Corp., Akron, Ohio). U. S. 2,351,350, June 13. A process for the lamination of plurality of rubber hydrochloride film.

COMBINED CIGARETTE & MATCH PACKAGE. H. Neivert, New York, N. Y. U. S. 2,351,223, June 13. A match-carrying folder intended for use with a package of cigarettes.

PACKAGE. H. B. Tuthill (to Oliver Machinery Co., Grand Rapids, Mich.). U. S. 2,351,306, June 13. A package comprising a plurality of nested cup-like articles each having a closed bottom.

COMBINATION DISPLAY BOARD, CONTAINER & PAD. S. Weissman, New York, N. Y. U. S. 2,351,378, June 13. A display board and a base portion, the base portion comprising a container and pad, therein supported by the bottom wall thereof.

LIPSTICK CONTAINER - DISPENSER. H. Broder, New York, N. Y. U. S. 2,351,395. June 13. A container-dispenser for a lipstick cartridge, said container-dispenser being composed wholly of molded plastic material.

BLADE HOLDER. E. Merki, Portland. Oregon. U. S. 2,351,442, June 13. A razor-blade package comprising a plurality of razor-blades and one more than an equal number of longer and wider water-resistant paper separators arranged in surface contacting alternate disposition.

TIN-COATED COLLAPSIBLE TUBE. J. Hoch (to Victor Metal Products Corp., Brooklyn, N. Y.). U. S. 2,352,384, June 27. A collapsible tube comprising a conical shoulder having an opening therein, with cylindrical distortable lip surrounding the opening and a one piece neck-forming member having a pair of spaced apart concentric walls joined at their tops by an integral annular wall.

COLLAPSIBLE TUBE. G. W. Temple (to Victor Metal Products Corp., Brooklyn, N. Y.). U. S. 2,352,456, June 27. In a collapsible tube, a neck terminating in an annular shoulder extending inwardly from the outer surface of the neck, a substantially cylindrical wall of less than that of the neck, the terminal edge of the extension being adjacent an outer surface of the wall.

CLOSURE. W. H. Hendricks, Sycamore, Ill. U. S. 2,352,382, June 27. In combination a container member having an annular lip defining the opening thereof, a closure member adapted to be disposed over said lip.

CONTAINER MAKING MACHINE. H. Carew (to Dixie Cup Co. a Corp. of Delaware). U. S. 2,352,369, June 27. In a container making machine, a reciprocatory forming element movable continuously in each direction between reversals of direction, and capable of carrying a blank to be formed thereabout.

DISPENSING CASK FOR PRESERVING LIQUIDS. F. C. Marzo (one-third to A. G. Rivard, Los Angeles, Calif.). U. S. 2,321,836, June 15, 1943. A cask for an air-sensitive liquid consisting of a body with a cylindrical side wall, and a bottom head having a collapsible bag-form, substantially air-tight liner having a flexible integral inner end to lie against the bottom head, an upper head secured to the edge of the body and forming an air-tight seal between the edge of the bag, the edge of the body and the head, said body having a vent through its cylindrical wall adjacent the bottom of the body, a detachable seal consisting of a strip of tape-like material adhering to the outer side of the wall of the cask, covering said vent and adapted to be torn off before the liquid is to be drawn off through the said head, thereby permitting atmospheric air to enter the void created by the withdrawal of the liquid.

HOLDER FOR LIPSTICKS & THE LIKE. H. F. Reichenbach (to Chase Brass & Copper Co., Inc., Waterbury, Conn.). U. S. 2,352,448, June 27. An adjustable holder for lipsticks and the like, comprising a hollow body-member provided with a guide-slot extending through its side-wall.

APPLICATOR. H. M. Borden, Minneapolis, Minn. U. S. 2,351,476, June 13. A cap applicable to the neck of a bottle and having an aperture in its top, a tubular member of relatively soft rubber extending through the aperture in the cap and having an outstanding flange constructed and arranged to be clamped between the cap and the neck of the bottle, and equipped with a swab in the form of a dome extending over the tubular member.

BOTTLE CARRIER. E. H. Lupton, Ilchester, Md. U. S. 2,351,528, June 13. A bottle carrier for double rows of bottles to be carried therein, and formed from a single blank.

PACKAGE. R. Guyer (to Waldorf Paper Products Co., St. Paul, Minn.). U. S. 2,351,812, June 20. A package formed from a blank of sheet material and comprising four substantially rectangularly arranged side walls, one of said side walls including a portion of double thickness, closing flaps on said side of wall.

TAPE DISPENSING CONTAINER. W. F. Punte (to Continental Can Co., Inc., New York, N. Y.). U. S. 2,351,781, June 20. A container of rectangular body for enclosing a tape supply.

CONTAINER. J. J. Blum (to The Fibre Forming Corp., Olean, N. Y.). U. S. 2,351,804, June 20. A waterproof, rigid, fibrous container comprising a tubular outer body portion having an integrally formed bottom with relatively short tubular positioning and supporting members.

SHIPPING CASE. J. K. Limbert (to Central Fibre Products Co., Inc., Chicago, Ill.). U. S. 2,351,825, June 20. A shipping case embodying therein an open top rectangular body of sheet material formed to provide a bottom and pairs of upright end and side walls for the body.

ART OF MERCHANDISING PACKAGING. E. M. Brodgen & R. Brogden (to Duz-Pak Corp., Savannah, Ga.). U. S. 2,351,596, June 20. An apparatus for packaging substantially rigid columnar articles having at least one flat end, such as bottles or cans, a flat plate-like member adapted and arranged to engage one flat-end face only of a generally rectangular group of such articles.

DETECTOR MECHANISM FOR CAPPING MACHINES. R. J. Steward (to Crown Cork & Seal Co., Baltimore, Md.). U. S. 2,351,888, June 20. The combination in a capping mechanism of a supply chute for skirted metal caps, a pair of resilient contact elements projecting into the chute sufficiently far to exert pressure upon the caps.

COLLAPSIBLE PAPERBOARD RECEPTACLE. G. N. Lee (to Brett Lithographing Co., Long Island City, N. Y.). U. S. 2,352,393, June 27. A collapsible paperboard receptacle made of a single blend of material shaped to produce uniform panels having longitudinal score lines therebetween.

IMPROVED PACKAGE. R. R. Walton (one-half to Container Corp. of America and one-half to Dewey & Almy Chemical Co., Cambridge, Mass.). U. S. 2,352,503, June 27. An improved package comprising a container of fibreboard or the like having a body portion and a plurality of flaps hingedly attached to said body portion to form a top closure therefor, and a bag-like lining element of flexible, liquid-impervious material, having a mouth portion sealed by twisting the material adjacent said mouth portion.

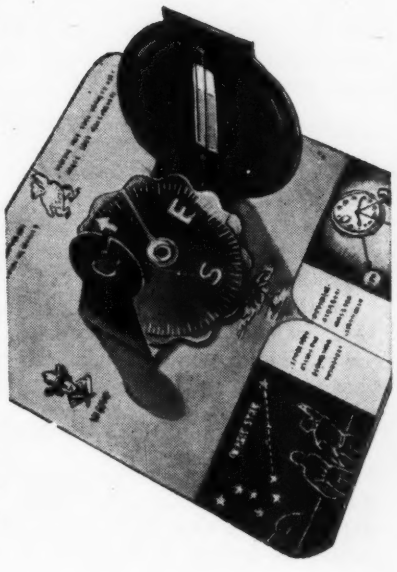
CLOSURE OR SEALING MEANS FOR PAPER OR CARDBOARD RECEPTACLES. W. Marcut & A. Baum, New York, N. Y. U. S. 2,352,561, June 20. In a paper receptacle or the like having sealing means forming part of a blank from which said receptacle is manufactured.

"... in the way they should go ..."

The war takes a city bred boy, sets him down in desert, jungle, woods or mountains, without a familiar landmark, road marker, street sign or traffic cop ... And if he doesn't know where he is, and where he's going, he can lose his dinner, a night's sleep, the lives of a platoon, or a crucial battle! The Army insists that every man must know maps, directions, orientation.

Maps were no problem. Compasses by the million for training purposes simply didn't exist! ... So Einson-Freeman, by invitation, supplied a substitute—a pocket size azimuth finder of cardboard and cellophane, so simple and clear that no G.I. could miss with it ... to teach the working and use of a compass, and its correlation with maps. Millions of these azimuth finders have been used ... And thus far, the Army seems to know where to go as well as what to do!

THIS azimuth finder is only one of the dozen training devices that Einson-Freeman has been privileged to produce ... in the wartime effort to make better soldiers sooner. Ideas have always been our business. But after this cram course in getting complicated ideas across to millions of soldiers ... it's going to be duck soup to get across simple ideas to millions of consumers! ... No trouble to show our goods, any time.

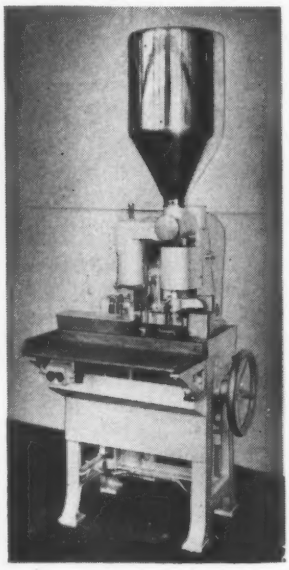


Einson-Freeman Co., INC. *WELL ORIENTED LITHOGRAPHERS*

STARR & BORDEN AVENUES, LONG ISLAND CITY, NEW YORK

Equipment and Materials

JAR FILLING MACHINE



Arenco Machine Co., New York, announces that several new models of their jar filling machine, both semi-automatic and automatic, will be available after the war. Photo shows semi-automatic model with filling head and surface leveling device. This type runs continuously, jars being fed to the machine and removed by hand. Speed is 1500 per hour. In the fully automatic machine, the empty jars are fed in on a belt at the right hand side and after filling and surface leveling, are delivered back on the belt. Speed of the latter model is 2000 per hour.

The standard maximum filling capacity is 9¼ cubic inches. Machines may be custom built and equipped with pumps capable of handling 26 cubic inches.

PHOSPHORESCENT PAINT

The New Jersey Zinc Co., New York 7, N. Y., announces development of new pigment for use in phosphorescent paint, marking tapes, decalcomanias, etc. The new material is known as CaS-SrS-2470.

NEW ORGANIC CEMENT

"Pliobond"—a new organic cement suitable as a bonding agent for any two materials—has been announced by the Goodyear Tire & Rubber Co., Akron, Ohio. The company states that through its use it is now possible to bond wood, rubber, plastics, cloth or leather to any desired metal or other material, and that laboratory tests have shown that bonds made with this material will withstand a temperature range from 109 deg. F. below zero to 170 deg. above zero.

OBLITERATING INK AIDS CARTON RE-USE

"Block-Out," a new buff-colored ink, applied by brush over old markings on cartons and boxes makes possible the re-use of containers. The manufacturers, Diagraph-Bradley Stencil Machine Corp., St. Louis 8, Mo., claim that it dries quickly, provides a surface blending in color and takes new markings clearly.

Another answer to the carton shortage is a paint called "Mask-Lak," manufactured by Phelan-Faust Paint Co., St. Louis, Mo., which is said to obliterate completely markings on wood, metal or fibre.

CORROSION-PROOFING LEAD ALLOYS

A line of lead alloys with low tin content has been developed by the National Lead Co., New York. The alloys, the company states, apply with a flux, are available in a hot-dip process, coating the surfaces of fabricated metal parts against corrosion.

BATCH TYPE SHREDDER AND MIXER

Northmaster Div., Struthers Wells Corp., Titusville, Pa., recently introduced a new batch type shredding and mixing machine for use in shredding such materials as alkali cellulose, paper, plastics, asbestos and foods. The machine is equipped with improved mixing blade which, in combination with a serrated saddle and specially constructed mixing chamber, is said to minimize the tendency for moistened pulp to collect in the corners of the trough above the blades and escape treatment. Machine is available in sizes up to 4000 gallons working capacity.

VACUUM UNIT FOR RETURNABLE DRUMS

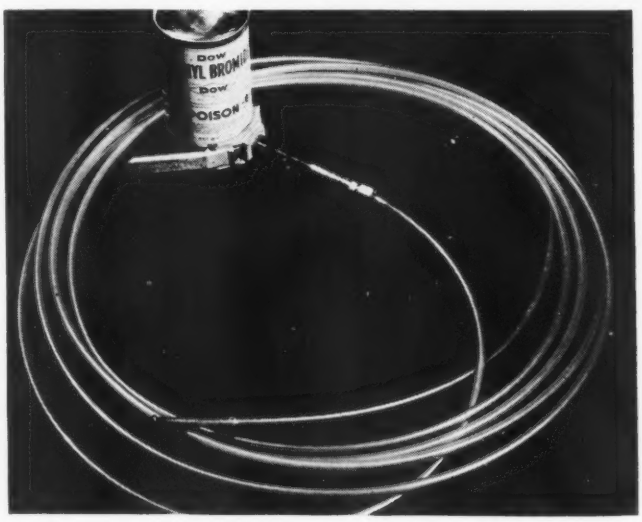
Designed to salvage residues, the Vol-U-Meter Co., Buffalo 16, N. Y., announces their vacuum pump and belt-connected motor, assembled on a channel base and equipped with a suction pipe, that seals in the bung of a drum into which residue from other drums is to be accumulated. A connection in the suction pipe leads through a hose line to a valve and suction tube; this is inserted into a drum which is to be emptied. When the accumulating drum has been filled, the liquid will flow into a bottle located between the pump and drum in the suction line thus signalling need for another drum or draining.

HEATING AND DIPPING TANK

A three-compartment portable heating and dipping tank has been developed by the Heil Engineering Co., Cleveland, Ohio. Designed for a wide variety of uses, the tank's three compartments are basically designed for degreasing, rinsing and pickling. An unusual feature is the tank's dual purpose cover and shelf, thoroughly acid-proofed and arranged to drain into the tank. Compartment No. 1 is furnished with a standard heating unit for hot alkaline degreasing compounds; Compartment No. 2 is for cold rinsing and Compartment No. 3 is lined with Plast-O-Ply, an acid-resistant coating. The tank is integral with a welded steel frame, equipped with swivel casters. Overall size of standard model is 20 in. by 36 in. by 36 in. high.

FUMIGATION APPLICATOR

To prevent the development of infestation in the shipment of foodstuffs, a method has been devised which affords fumigation from the outside of boxcars simply by placing one-pound cans of methyl bromide in the applicator, which punctures the can,



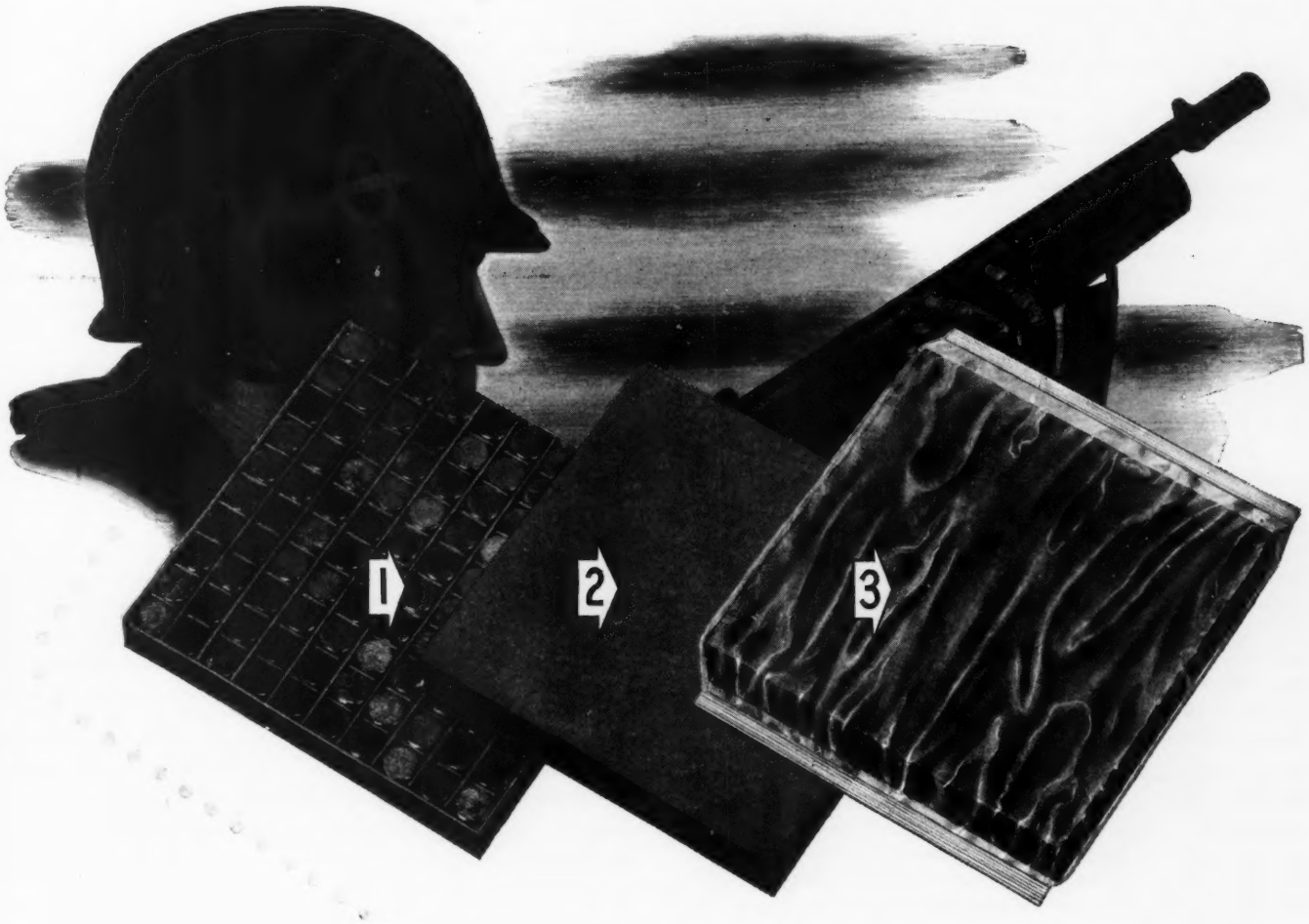
releasing the gas to either end of the car above the load, through Saran tubing. Because of its chemical resistance, Saran tubing has proved to be highly adaptable to this type of fumigation, while its flexibility simplifies installation. Applicator is manufactured by Arrow Products Co., Carlstadt, N. J.; Saran tubing, The Dow Chemical Co., Midland, Mich.

Anywhere, Anytime, Anyhow, Bar Nothing

This slogan of our invasion troops typifies their rugged readiness for service. In the same spirit our LOXTITE *protective* Partitions and TITE-SEAL Waterproof Cellophone Bags deliver supplies to the fighting front in perfect condition . . . protected against abrasion, breakage, water or corrosion.

Here is packaging service par excellence . . . *double* protection. *Inside*, LOXTITE Partitions tailored to your specifications on our exclusive automatic machines (patented) . . . *Outside*, TITE-SEAL Waterproof Cellophane Bags to exclude dust, moisture, and all contamination.

Let our packaging experts serve your present needs and plan with you for the peace to come.



Buy Bonds
SPEED VICTORY!

TRACO
"Packaging Perfection"

LOXTITE partitions meet economy requirements through quantity production on our own patented automatic machines. TRACO cellophane wraps, bags, etc., multi-color printed in attractive designs will conquer competition and win you wider markets in the post-war world.

Patents Applied For

TRAVER CORPORATION
Dept. MP9, 358-368 West Ontario Street, Chicago 10, Illinois

Plants and People

R. J. Fitzgerald

H. E. Wright

R. J. Fitzgerald succeeds Howard E. Wright who is retiring from the post of New York district manager of the glass and closure division of the Armstrong Cork Co. after 52 years of service with the company. Mr. Fitzgerald who has been Chicago district manager since 1939 has had 25 years of experience with the company and is being replaced by T. J. Ryan in that area.

Container Service Co., Los Angeles, has taken over the representation of Celluplastic Corp., Newark, N. J.,

Capt. Mack E. Kittay, just returned from two years in service, has been appointed manager of the Southern division of National Starch Products, Inc., with offices in Houston, Texas. Incidentally, the company has recently announced that it now has 34 employes, including officers, in its Quarter Century Club.

J. Howard Hamilton, canning industry executive who has been serving as a consultant to the Government, was presented with the War Department's exceptional service award recently. Mr. Hamilton, who had been on loan to the Government, resigned as of March 1 to resume his position with the American Can Co. as assistant manager of sales in its Pacific division.

Postwar plans announced by American Can call for establishment of one of the company's largest manufacturing units in St. Louis. The new plant, originally intended for can manufacture but made available to the Government for torpedo production, will have more than 600,000 sq. ft. of floor space and will employ 750 workers. Peacetime production of this plant is expected to supply the needs of the Ozark area canners and also the requirements of the oil industry in the Tulsa district.

Alvin G. Hornney has been placed in charge of the newly opened New York sales office of the Burt Machine Co. Mr. Hornney also represents the J. L. Ferguson Co. and U. S. Bottlers Machinery Co. and has as his associate R. Nelson Hickman, formerly an engineer in WPB. Tom McLay, who, like Mr. Hornney, represents J. L. Ferguson, has been appointed Eastern representative.

L. F. Weyand, general sales manager of the Minnesota Mining & Manufacturing Co.'s adhesive and coatings division, has been promoted to general manager. Mr. Weyand will continue to maintain headquarters at the 3-M factory in Detroit.

Continental Can Co., Inc., has acquired all of the capital stock of the Cameron Can Machinery Co., of Chicago, which it will operate as a subsidiary with the same officers as heretofore, namely, Allan M. Cameron, president; William M. Cameron, vice-president; Robert K. Cameron, secretary. There has also been a reorganization of the cannery equipment service department of the parent company. P. S. Pedersen has been placed in charge of the Houston territory as well as the balance of the Central division and H. L. Minaker is now in charge of the entire Eastern division. Other changes are: W. H. Morgan, general manager; H. J. Farrell, manager, Houston district; C. P. Weber, manager, Syracuse district; G. F. Jackson, manager, Baltimore district; J. T. Yolland, manager, Seattle district; Alexander Ruhl, manager, Oakland district; and Gale Waite, manager, Los Angeles district.

The Eastern division of the Continental Can has moved to 122 E. 42nd St., New York, where the office of the Bond Crown Cork Co., a division of Continental, is also located.

R. J. Minbiole, formerly of the New York office of the Dow Chemical Co., has now been put in charge of packaging materials and P. W. Simmons is handling protective coating materials.

Lt. Comdr. Roger L. Putnam, chairman of the board of the Package Machinery Co., is back from England on a short leave. Commander Putnam is assisting Admiral Kirk in charge of amphibious operations and in this capacity took part in the Normandy invasion. Many of the invasion craft used were equipped with the new Mark XVIII gyro-compass. Sperry Gyroscope Co., and Package Machinery Co. are the only prime contractors building it.

Earl Burns, manager of the Owens-Illinois Can Co.'s Baltimore branch, has been named manager of the Chicago branch and Jack Thayer is now manager of the New York branch.

The employes of the Philadelphia plant of Container Corp. of America have received a new Army-Navy "E" flag with two stars in recognition of their continued excellent production.

Simeon W. Strauss, former merchandising manager of the R-V-Lite division of the Arvey Corp., is now Arvey's Midwest sales manager. Paul Godell remains as general sales manager in charge of national sales.

Marathon Corp. is the new name for the Marathon Paper Mills Co., but the personnel and organization remain the same.

Andrew R. MacQueen, who has been a sales representative in Bingham Bros. Co., Philadelphia Branch and more recently connected with the sales department in New York, has been promoted to manager of the company's Rochester branch.

The Heller & Merz department is handling the sales of products for the paper trade made by the pigment department, Calco Chemical Division, American Cyanamid Co. The organization is headed by J. H. Loomis, sales manager, who announced that Heller & Merz also will handle the products of the Virginia Chemical Corp., just acquired by Calco.

Minerva Wax Paper Co., Minerva, Ohio, has been acquired by R. G. Hathorn of Cleveland, who will continue to operate the company without any change in its operating management. A. F. Gluck has been elected to succeed P. A. McCaskey as president since the latter's retirement.

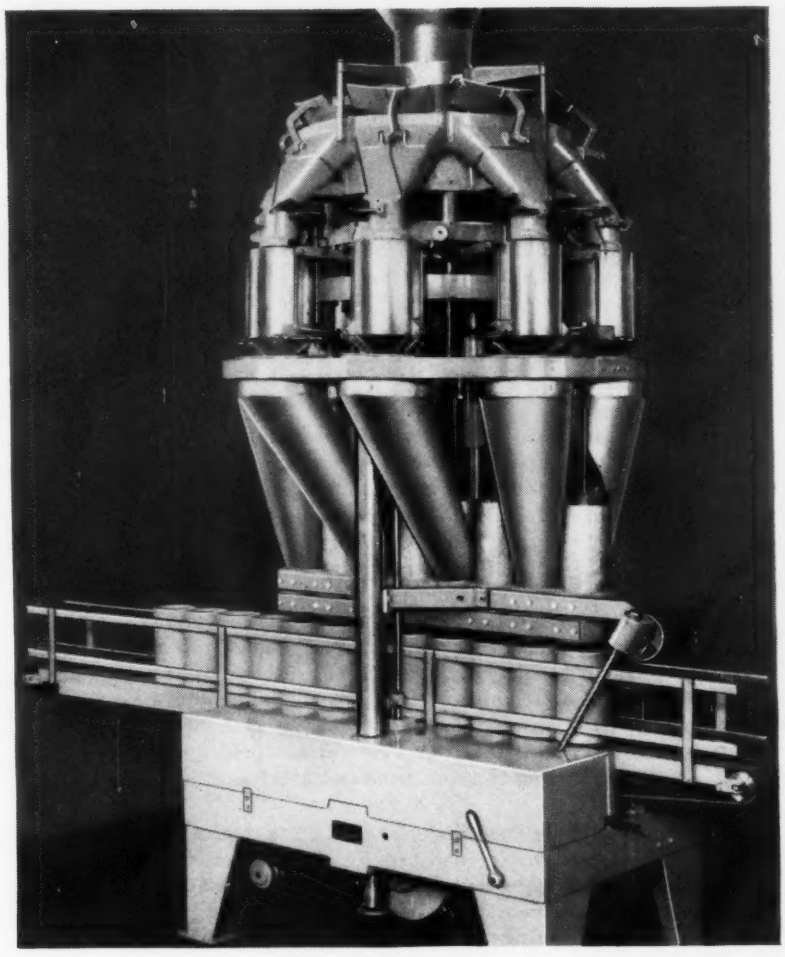
G. G. Otto, general manager of the Alton Boxboard Co., and former director of the Paperboard Division of the Forest Products Bureau of WPB, died on July 4 in St. Louis.

Frank Griswold Hall, president of Stein, Hall & Co., Inc., and a pioneer in the industrial development of starch and adhesives, died on July 30 as a result of an automobile accident.

Harvie J. Robertson, since 1923 manager of The Gardner-Richardson Co. New York City sales offices, died suddenly on July 5.

PLANNING YOUR POST-WAR PACKAGE HANDLING?

PACKOMATIC MAY HAVE A SET-UP TO HELP YOU



Plan your postwar packaging to meet the preferences of your market —and leave the job of filling, sealing and imprinting up to us.

Out of 23 years of experience in practically every packaging sector, PACKOMATIC engineers have the know-how to help you. This know-how is yours to command NOW—delivery when Industry is permitted to resume peacetime production, which may be *SOON!*

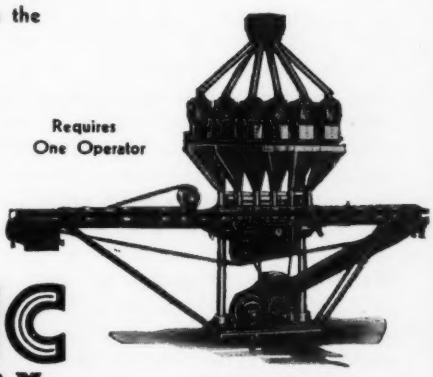
Consider the units on this page. They are typical of PACKOMATIC'S ingenious, practical approach to specific problems.

PACKOMATIC'S NEW Automatic Weigher (above) is designed for handling rolled oats—or similar products—into paper cans. The rotating disc-feed principle delivers the product into the weighing compartments with a minimum of disturbance to the stream. Cornerless, round buckets eliminate impeding flow of product. Containers are automatically conveyed, registered and filled to net weight desired, and carried away on belt conveyor. This new PACKOMATIC occupies only 3' x 9' floor space. Fully automatic—requires no operator.

A request for additional information in regard to PACKOMATIC experience and PACKOMATIC equipment incurs no obligation to buy. Feel free to write, wire or phone, depending upon the urgency of your situation.

PACKOMATIC Volumetric Four-Pocket Filler (Left) for Free-Flowing Products. Easily Adjustable for Weights. Speed 60 per minute.

PACKOMATIC Six-in-Line Automatic Net Weigher (Right) Equalizing Feed Spouts and Settling Device. Speed up to 60 per Minute.



Requires One Operator

You'll find a PACKOMATIC representative in

PACKOMATIC
PACKAGING MACHINERY

J. L. FERGUSON COMPANY, JOLIET, ILLINOIS

NEW YORK . . CHICAGO . BOSTON . . CLEVELAND . . DENVER
LOS ANGELES . SAN FRANCISCO . . SEATTLE

BACK THEM WITH YOUR WAR BONDS

For Your Information

The Stock Mold Department of Modern Plastics magazine has compiled a completely revised and enlarged edition of the Catalog of stock molds, extrusion and laminates.

In additon to containing all current stock injection and compression molds for plastics, the present edition, completely illustrated, includes extruded cross-sections and laminated sheets, rods and tubes. The book is designed for quick, easy reference. Each stock mold item has an identifying number which is indexed numerically as are the laminates. These indices give the name of the molder, extruder or laminator. The edition contains also a complete listing of the sources of supply.

Copies are $5.00 and may be had from Stock Mold Dept., MODERN PLASTICS, 122 E. 42nd St., New York City.

A new standing technical committee has been organized by the American Society for Testing Materials to function in the field of adhesives. It was formally organized at a meeting of the Society late in June. The technical men who are serving as members of the committee, representing leading producers and consumers of adhesives, discussed problems in connection with scope, important activities which needed to be started, personnel, etc. T. R. Truax, principal wood technologist, U. S. Forest Products Laboratory, has been appointed temporary chairman; P. H. Bilhuber, Steinway & Sons, vice-chairman; Henry Grinsfelder, Resinous Products & Chemical Co., secretary. A number of sub-groups are being appointed to be responsible for specific projects such as: strength tests, analytical tests, tests for permanency, working qualities, specifications and nomenclature and definitions.

A new booklet entitled "Case Histories to Aid You in Blueprinting Conversion to Peace," published by the Lamson Corp., Syracuse, N. Y., outlines case histories showing how conveyors made by the company have speeded up production in many various types of manufacturing plants converting to war work. The booklet is designed to show production men how a similar job can be done when converting to peace.

Ever Ready Label Corp. announces the release of a new catalog featuring stock labels called "Tools of Business." Its 32 pages are printed in color and present a variety of unusual applications and economies in hundreds of label ideas in stock for immediate delivery. It's an every-day reference source for the shipping department, the mail room supervisor and advertising man. Requests for the catalog should be addressed to the company at 141 E. 25th St., N. Y. C.

The Specialty Flexible Container Manufacturers Institute held its annual industry meeting recently at the Hotel Biltmore in New York to adopt a long-term publicity program to reach manufacturers and consumers. E. M. Rickel, of Union Bag & Paper Corp., and chairman of the industry publicity committee, presented an extensive program. It will include the preparation of informative literature that will assist manufacturers in solving wartime packaging problems. There will be also a series of institutional advertisements which will give specific instances showing how flexible containers have met emergency demands.

War Department Pamphlet No. 34-2, issued for war contractors by the War Department, contains suggestions to war contractors as to methods of and preparations for contract terminations applying to fixed-price supply contracts of the War Department.

Lynch Manufacturing Corp. has just released its new booklet describing its line of Wrap-O-Matic machines, used extensively in the wrapping of candy bars, cookies and biscuits. Copies may be had by writing the company, Defiance, Ohio.

The new library edition of Paper Trade Terms—a basic, illustrated dictionary of paper, compiled by Willian Bond Wheelright, is now ready for the trade. Copies sell for $1.50 and are available from The Callaway Associates, 210 South St., Boston.

The fall meeting of the board of directors of the National Paper Box Manufacturers Assn. has been scheduled for October 18 in Philadelphia. The list of officers and directors which appeared in partial form in July MODERN PACKAGING follows in its complete form. George J. Kroeck, honorary president; Walter P. Miller, Jr., president; A. M. Bond, vice-president; Henry J. Aemisegger, treasurer, and William R. Kreeger, secretary. The board of directors includes Paul A. Clement, William P. Datz, Jr., Allen K. Schleicher, Walter E. Trum, Sr., Fred C. Kewell and C. Knowlton Shaw, Jr. The following were elected chairmen of their geographical division and, therefore, serve as directors ex-officio: Fred R. ZurSchmeide, Southern; William J. McClintock, Jr., Central; Monroe L. Dix, Eastern; Henry J. Stecker, Western; James W. Scully, Sr., Pacific Coast; A. M. Bond, New England.

At the annual meeting of the Central division, National Paper Box Manufacturers Assn., William J. McClintock, Jr., of The McClintock Corp., was reelected chairman for the ensuing term. The new vice-chairman of the group is Daniel Huyett, of Standard Paper Box Mfg. Co. Members of the advisory board are: Floyd C. Wheeler, Bangor Paper Box Factory; Henry L. Stortz, Henry Schmidt and Bro. Inc.; George W. Morrison, Pottsville Paper Box Co., Inc.; Ed. P. Franke, George Franke & Sons, Inc.

Thatcher Manufacturing Co., Elmira, N. Y., the first producer of the standard milk bottle, has just introduced its new T-square milk bottle to the trade. This bottle, weighing only 17¾- oz. in the quart size, is being used at the present time by the Borden Milk & Ice Cream Co., Racine, Wisc. Thatcher claims that the bottle, which is made also in pints and half-pint sizes, is space-saving and light-weight. At the present time a complete sales brochure is being prepared which can be had upon request.

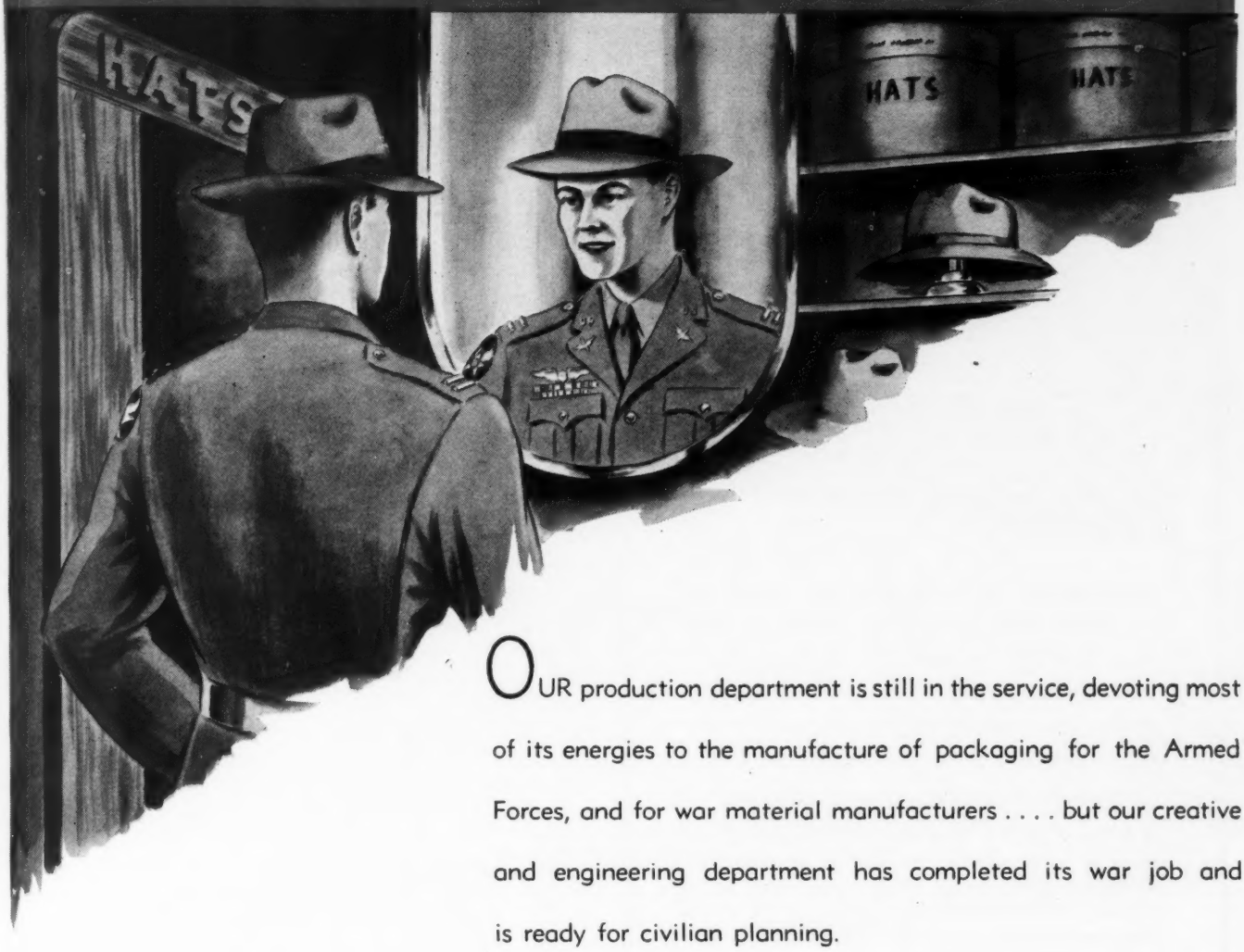
A 150-page book designed to assist canners in applying protective coatings to containers packed for export to the Armed Forces has been prepared by the American Can Co.'s research division and is now available for distribution through the Quartermaster's depot in Chicago. Equipment used by canners and illustrated in the book is not standardized but represents the canners' various solutions of an urgent war problem. Illustrations and descriptive matter cover both the dip and spray procedures as employed in leading canneries.

The sixteenth annual Boston Conference on Distribution will be held October 16 and 17 at Hotel Statler, Boston, according to an announcement made by Daniel Bloomfield, director of the conference. The main themes will be, "Foreign Trade Relations Affecting Our Future," "Coming Changes in Distribution," and "Government Surpluses and the Market." Many distinguished speakers, whose names will be announced later, will participate. The conference will be open to all those interested in following economic trends affecting business.

The sixth annual meeting of the Packaging Institute will be held at the Hotel New Yorker, N. Y., November 1 and 2. Look for further notice in the October issue of MODERN PACKAGING.

Correction: We regret that on page 95 of the August issue Butler Bros. was referred to as a department store whereas they are wholesalers of general merchandise.

PLANNING AHEAD



OUR production department is still in the service, devoting most of its energies to the manufacture of packaging for the Armed Forces, and for war material manufacturers . . . . but our creative and engineering department has completed its war job and is ready for civilian planning.

Old Dominion's creative and engineering staff is now busy adapting the packaging innovations, produced during this war, to peacetime purposes.

We are ready---now---to plan your packages of tomorrow.

Call On

OLD DOMINION BOX COMPANY

CHARLOTTE, NORTH CAROLINA

PLANTS IN NINE SOUTHERN CITIES

Folding Cartons • Set-Up Boxes • Convolute • Spiral Wound and Corrugated Containers

"THE SOUTHERN BOXMAKER WITH A NATIONAL REPUTATION"

Acceptance of dehydration

(***Continued from page 110***) the dehydrated foods tasted better than fresh foods, but many compared them quite favorably with canned foods. The housewives generally found little difference in the taste of dehydrated cranberries and sweet potatoes as compared with the fresh product.

Less than 10% of the housewives said that preparation of the dehydrated foods was difficult. In fact, many pointed out that the vegetables were easy to prepare because peeling and cleaning were unnecessary, and other things could be done while the foods soaked. Those who did have difficulties found it hard to achieve the desired texture and appearance. Preparation time did not seem to differ much in comparison with fresh products.

Approximately 75% of the housewives had previously heard of dehydrated foods and nearly half had used some of these foods. Dehydrated soup had been heard of by about 50%, vegetables by about 23%, eggs by about 18% and milk by about 13% of the housewives. Some had heard of more than one product while about 20% had not heard of any.

Housewives had heard favorable comments about dehydrated foods in about 28% of the cases, unfavorable comments in about 7%, but the majority of the housewives had not heard anything definite about them. About 38% of the housewives had a favorable opinion of dehydrated foods prior to the survey and only 5% had an unfavorable opinion. About 19% of them reported they had received information about dehydrated foods from acquaintances while 11% stated they had learned of them from the Armed Forces.

The real significance of the results of the investigation is that a large proportion of housewives do not appear to be definitely prejudiced against dehydrated foods, as many people have thought, and are willing to consider them with competitive foods when making purchases. The Bureau points out that acceptability will be affected by future changes in the quality of dehydrated foods relative to that of competitive products, in the extent of consumer knowledge of the nutritive and other qualities of dehydrated and competitive foods, by possible reductions in the time required for reconstitution, by changes in the types of packages used, by advertising and promotional campaigns, by the developments of new and improved recipes, and by changes in relative prices.

Among the package suppliers who participated in the survey were the American Can Co., Container Corp. of America and Thomas M. Royal & Co.

Cosmetics . . .

(***Continued from page 104***) counter appeal rivaling women's cosmetics.

This month, John Hudson Moore, Inc., long known for unusual men's line packaging, will introduce its new Sportsman fish shaving bowl, made of sea-green ceramic with a big mouth bass modeled on the lid for a handle. No printing of any kind appears on the bowl, so that it may be re-used afterward as a dresser receptable for cuff links and other small accessories. This is the third of the Sportman series of shaving bowls. Those previously introduced were the Decoy, a duck-shaped pottery container, and Bowl-er, a pottery jar simulating a black bowling ball.

With the keynote, "Surfspray brings you the cool clean

Don't forget to put in the pickles!

Particularly when they're *Dolly Madison* brand! These plump juicy pickles with their piquant appetizing tartness add zest and interest to any meal.

Dolly Madison Pickles are prepared and distributed by The H. W. Madison Co., Cleveland, Ohio. They are packed in sturdy glass containers which are securely sealed with Crown Screw Caps (which have the superior Crown Plastic Liner)—the closures that consumers like better because they come off and spin on so easily.

CROWN CORK & SEAL COMPANY

Closure Division • *Baltimore-3, Md.*

WORLD'S LARGEST MAKERS OF METAL CLOSURES

CROWN CLOSURES

Crown's Wartime Policy: *To supply closures, containers and services for packaging foods, beverages, chemicals, etc., needed by civilians and the armed forces. To build an ever-increasing volume of vitally needed weapons of war for our fighting men.*

tang of the sea," James E. Coates and Co., Chicago, has introduced a line of toiletries for men under the name of "Surfspray." The design—a few brush strokes suggesting the swish of a wave—is simple, massive and memorable.

The theme behind the packaging, the company stated, was simplification of line and design to produce an item which would be acceptable to the masculine trade. The glass containers have a large solid black walnut cap, affixed to a standard metal closure for protection. Labels are for the most part decals. Effectiveness of the glass containers is enhanced by the green color of some of the products, which adds to the marine illusion. The shave bowl, shave stick and deodorant containers are made entirely of black walnut. Cartons are printed in brown and white, harmonizing with the black walnut. The line is being sold in leading department stores.

This article by no means includes all new lines, but is fairly representative of trends in one of the country's continually booming industries where attractive packaging is the very breath of life.

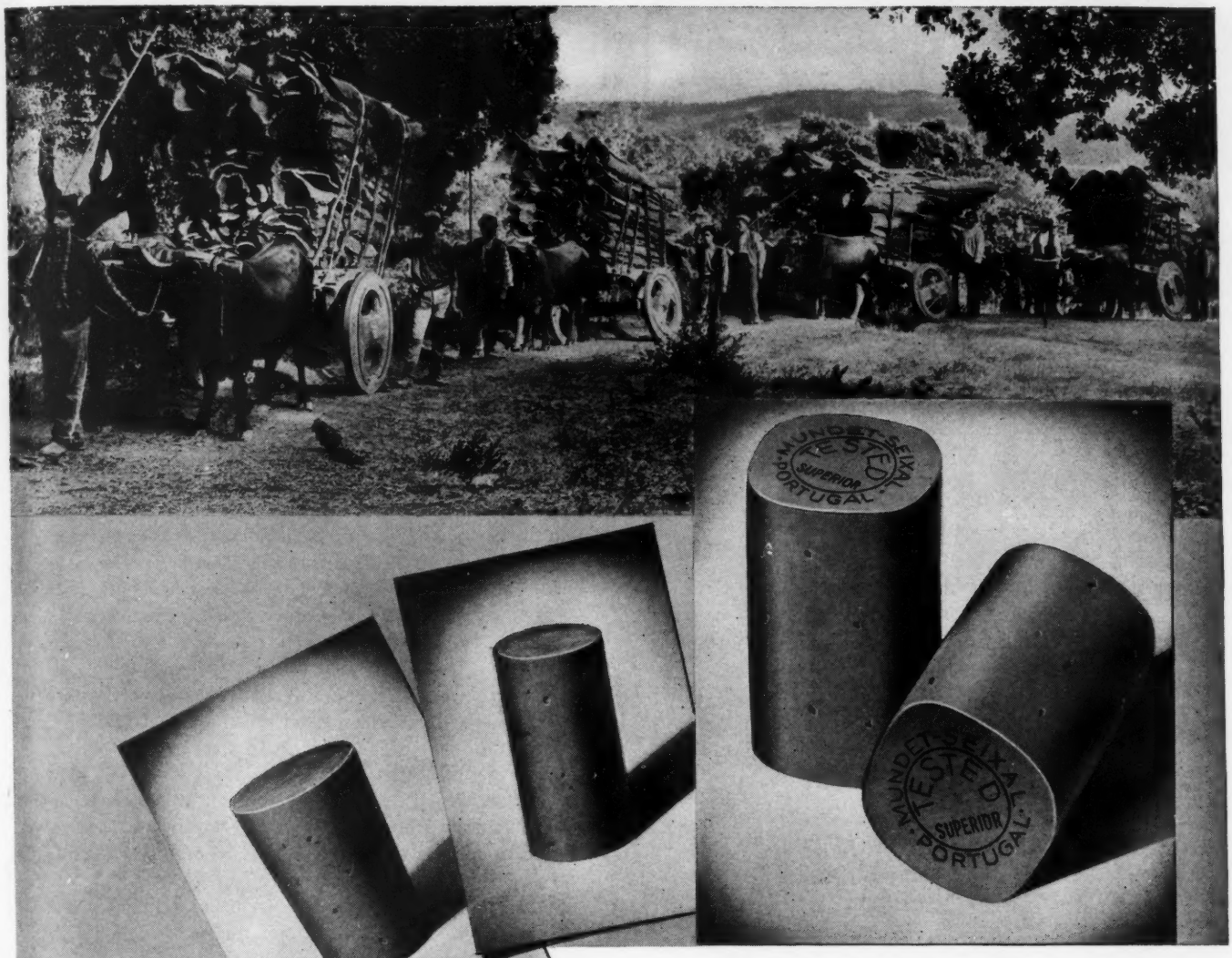
Credit: Helena Rubinstein—Bottles: Carr Lowrey Glass Co., Baltimore, Md. Closures: Colt's Patent Fire Arms Mfg. Co., Hartford, Conn.; Fontaine Products Co., New York; Armstrong, Cork Co., Lancaster, Pa. Labels: Addison Lithographing Co., Rochester, N. Y.; T. C. Wheaton Co., Millville, N. J.; Creative Printmakers, New York; Palm, Fechteler & Co., New York Plastiglas, New York. Boxes: Waterbury Paper Box Co., Waterbury, Conn.; Ferdinand Buedigen, Rochester, N. Y.; Linden Boxcraft, Brooklyn; W. C. Ritchie & Co., Chicago; Cross Paper Products Corp., New York. Lipstick container: F. N. Burt Co., Buffalo, N. Y. Plastic compact: Norton Laboratories, Lockport, N. Y. Box wraps: Addison Lithograph Co. and Wrigley Bros. N. Y. Folding Cartons: Rochester Folding Box Co., Rochester, N. Y., and Addison Lithographing Co. Daggett and Ramsdell—Lipstick Container, Eyelet Specialty Mfg. Co., Waterbury, Conn. Folding carton: William W. Fitshugh, Inc., Brooklyn, N. Y. Yardley—metal lipstick: Risden Mfg. Co., Naugatuck, Conn.; printed paper, Continental Printing Co., New York; case design, Reco Capey. Nadair—bottles, Swindell Glass Co.

Tomorrow's hosiery

(*Continued from page 101*) competition for the department store basement if the old methods of selling women's hosiery were to be continued. Certainly on the popular priced, fastest selling types the department store basement will tend toward a new solution. They will demand hosiery which can be stacked up like boxes of cereal in a super market, and which will simply be picked up by the consumer without the intervention of the sales clerk. This will require a new kind of packaging. Not only will the color of the stocking have to be visible but its texture, its weight, its length and size will all have to be clear to the woman buying the stockings.

In the years immediately preceding the war women's full-fashioned hosiery was, much of it, delivered packed in individual cellophane envelopes. Most department stores permitted women to open these envelopes and examine the stockings before buying them. The package therefore had to be picked out of the box by the sales clerk, and the customer kept under observation by a clerk fearful that a hangnail, a rough fingernail, a ring or a bracelet might destroy the salability of the stocking. That was a case of packaging which did not solve any problems.

However, in the chain stores selling popular priced hosiery



MILLIONS OF AIR CELLS TO SEAL ONE BOTTLE...

There are actually millions of microscopic cells in *one* Mundet Cork Closure. These tiny walled chambers, each holding entrapped air, form the remarkable structure that makes Cork so resilient and liquid-tight. It's the reason why Cork of the proper grade and quality, expertly machined and sized, gives complete and lasting protection to bottled products.

Cork—*fine sealing* with Cork—has been Mundet's specialty for 79 years. From harvesting of the raw Cork in warm Mediterranean lands, to manufacture and final inspection of the Cork Closures in the Mundet plant, every precaution is taken to give your products supreme sealing protection. Mundet Cork Closures are clean, properly graded, and precision-sized. They are made in many types for specific requirements. For other information, write to Mundet Cork Corporation, Closure Division, 65 South Eleventh Street, Brooklyn 11, N. Y.

MUNDET
—CLOSURES—

the same stockings were sold in *sealed* envelopes, customers were not permitted to open the box before purchasing the stockings, and the chains were able to overcome a traditional method of buying hosiery which the department stores considered unalterable.

Clearly, the retailer who wants to sell popular priced full-fashioned hosiery in volume and wants to be able to bring women to his store by virtue of his values will have to be able to sell the stockings at a lower cost. The sealed package which enables a woman to buy the stockings on the self-service plan is part of the answer.

But if self-service selling is going to play an increasingly important role in popular priced stores—basement stores, chains as well as super markets—then not only must the package be one which tells the complete story and sells the item—it must also be one which discourages any possibility of pilferage.

With the reappearance of nylon which is a man-made yarn with completely predictable characteristics, the character of full-fashioned hosiery retailing is going to change completely particularly when it comes to the popular priced constructions of medium weight stockings for general wear. In the merchandising of nylon stockings and probably the selling of many other types of hosiery, laboratory test information will form part of the selling story. When it is possible to embody in a package not only the appeal of the article but also its selling points and in addition convince the consumer of its quality, that package then becomes grist for the fast-growing self-service mill.

Since hosiery turns over so quickly and is bought more often than any other item of apparel, it naturally builds sales of other articles as well. This makes it that much more important for the retailer to safeguard carefully his hosiery volume.

Women are going to buy hosiery and women buy most of the men's hose as well as the children's and women's hose—not on the basis of the pretty girl on the box but on the basis of value, quality and confidence. The retailer whose hosiery package tells the woman all about the stockings or socks she is buying; explains the special features of construction; tells her how to take care of the hose for longer wear; gives her the laboratory findings, and explains why the multiple pair package is her best bet, that retailer is going to get women coming back into his store to buy the hose in preference to the store of his competitor, where the stockings cost more, and where a woman has to learn about the hose from salespeople who often cannot give her the information she wants.

Mind you, my remarks may not be interpreted to mean that the selling of finer quality, higher-priced hosiery can be reduced to the robot type of operation. But since the heaviest demand for economical selling will be placed upon the retailer of popular priced goods, it is in this area that the new forms of hosiery packaging will make their greatest advances.

If MODERN PACKAGING is late

Due to production and transportation difficulties beyond our control it is quite possible that your copy may be reaching you later than normally. If so please bear with us during this emergency period.

Progress in plastic bottles

(*Continued from page 92*) both, give promise of such improvements as to make containers of polystyrene or modified polystyrene equal, if not superior in all respects, to those made of cellulose acetate or of other cellulosic compounds.

Another advantage of the polystyrene container which opens wide fields of application is its nearly universal resistance to acids and alkalis. However, an executive of the company brought forth one hiterto little-known disadvantage of polystyrene—that it cannot be used as a universal container material and, therefore, he did not feel that druggists would substitute plastic containers for their present stocks of glass bottles to any large extent. He also stated that some tinctures attacked polystyrene and that oils at elevated temperature affected it. Specifically, the alcohol in the tincture does not attack the container but the actual tincture itself is the culprit. The higher price of the polystyrene container may prevent its use in competition with the lower-priced glass container.

Although most of the thermoplastics cannot be sterilized by live steam, ultra violet light offers a means by which plastic bottles can be sterilized quickly and commercially. Thus, such containers may be made available to the pharmaceutical and cosmetic field. One form of styrene has recently been developed which, it is claimed, can be sterilized by conventional means.

Of course, in the container field, price is an important factor. Roughly, a thermoplastic container weighing approximately one-third as much as a glass container of equal volume would cost three times as much. With glass material at $^3/_4$ of a cent per pound, it would be rather difficult to put out a container in polystyrene, acetate or, for that matter, in any of the plastics at a price as low as that of a similar container in glass.

There are, however, many applications in which the plastic container would be specified in preference to glass, because of one or more of the inherent physical properties of the plastic which would make its use advantageous or, in some cases, necessary. For example, the styrene bottles may develop a very large field of application in the packaging of mineral acids, particularly such acids as hydrofluoric acid. Figure 1 indicates a few of the possible applications of this process for forming hollow articles. It also indicates the eye appeal of a variety of items when they are produced in plastics.

A major advantage of the plastic containers produced by this blowing process is their great saving in weight. By a rough rule of thumb, a plastic bottle is said to weigh approximately one-third as much as a bottle made of glass. In addition, because of the thinner wall section possible with plastics, the plastic bottle will occupy less space than a similar glass bottle. Good strength characteristics are another feature, with the cellulosic plastic containers being somewhat better in this respect than those which have been blown from polystyrene.

Because of their light weight, plastic containers have at this particular time found use in the shipment by air of various drugs and vitamins to all parts of the world. Wherever long-distance air shipments are concerned, it has been estimated that the cost of the lighter plastic container plus the cost of air transportation is less than the lower cost of the glass container plus the higher cost of its transportation by air. As a result, a far greater number of the light plastic

containers may be carried by air transport than would be possible with the higher and somewhat bulkier glass container. Naturally this is a strategic factor which is of vital importance today and will also be an essential consideration in the future since air transportation rates are charged by weight of the commodity being shipped.

The extent to which plastic containers made by the blowing process will be used is still conjectural. Many new uses have been developed by the war. However, it is apparent that the limitations of the plastic materials themselves restrict the field of application. In the cosmetic and drug field a ready and wide application is apparent, but a wider use of the processes depends upon the development of a somewhat more universal plastic than is now known. Finally, in the postwar market, a lower raw materials' price will be absolutely imperative.

Credit: This article is based on an article, Extrusion Blowing of Thermoplastics, by Henry Griffiths, Plax Corp., Hartford, Conn., Modern Plastics, August 1944.

Air cargo

(***Continued from page 88***) charges by classification of the commodity.

Naturally, the shipper's request was refused. If the hats had become damaged, even disregarding the risk of loss by theft, the airline would have had to pay a heavy premium in claims for carrying the shipment. This case is mentioned here only to show the extremes to which shippers may go to avoid paying charges on the weight or measurements of the packing.

As the best all-around guide to the proper type of container to be used for air and air-rail express, the express agency, together with experienced shippers, box-makers and airline traffic men, believe that Rule 18 of the Official Express Classification is the best yardstick that can be followed under present-day conditions.

It is wise to try to pack in small units whenever possible. Smaller packages can be stowed more easily in airplane cargo compartments because they can be shifted around into odd corners to provide extra space. Shipments like these generally have a much better chance of making the earliest plane out.

Present-day airline cargo compartments can carry approximately 3,000 lbs.—and the exclusive "cargoliners" have a capacity of 6,000 lbs.

With respect to maximum floor load, commercial air transports can accommodate packages ranging from 40 lbs. per sq. ft. on some planes up to 100 lbs. per sq. ft. on others. Using the latter figure as an example, a box with a base 27 in. by 16 in. and occupying a floor space of 3 sq. ft. could weigh 300 lbs. without exceeding the designated limits.

Shipments that are overweight may be taken if provided with a larger base to spread the load, or if broken into smaller units.

Although the majority of the airlines that fly air express use the same type of plane, the interior design of cargo compartments may vary. Hence it is not possible to set up a rigid size schedule that would apply to all air express shipments. However, for the time being, it is safe to follow these dimensions: maximum depth, $18^1/_2$ in.; width, 44 in.; length, varying from 35 in. on a few airlines to $49^1/_2$ in. on most airlines.

Market reaction

(*Continued from page 97*) they were experiencing, if any, and what suggestions, if any, the consumer had. Oddly enough, we secured some valuable information that permitted us to make slight modifications to overcome or to minimize consumer or dealer complaints. We realized full well that we had a substitute package and that, however attractive, it could not be made quite as satisfactory as our pre-Pearl Harbor package, particularly when the substitute materials themselves were either reduced in quantity or restricted, thus necessitating frequent changes in materials.

In the normal course of our operations, all packaging materials and package construction are subjected to rigorous standard laboratory tests for six to eighteen months before even the slightest modification is adopted. The war economy would not permit this, and consequently we were obliged, in the interest of keeping dealers supplied, to do the most expedient thing and exercise the best judgment and common sense that we could.

Out of all of our trials and tribulations, a thinly disguised blessing has come. Having been forced by the exigencies of war to try many unorthodox procedures, we have gained knowledge that will be invaluable in our determination to supply the consumer with the ultimate in product and package for the postwar world.

S-coating

(*Continued from page 115*) leather (fabricoid with Pyroxyline coat) which was partially given a thin coat of "S" material (No. 278) over only one-half (left side) of the sample. The whole piece was subsequently covered with a thin layer of nutrient agar and uniformly inoculated with spores of *Penicillium* and *Aspergillus*. The picture was taken after 26 days of incubation at 30 deg. C. and saturated humidity. The photograph indicates that where the coating was applied, no growth occurred, whereas the uncoated (right) side of the sample shows prolific growth. This extends also over the cut (uncoated) edges of the sample.

In Fig. 7, one piece of laminated canvas (vinyl composition coat) was partially given a thin coat of "S" material (No. 278) applied over the upper half. The whole sample was subsequently inoculated with spores of *Penicillium* and *Aspergillus*. The picture was taken after 26 days of incubation at 30 deg. C. at saturated humidity. The photograph indicates that where the coating was applied, almost no growth (possibly four colonies) occurred, whereas the uncoated (lower) side of the sample shows prolific growth. Also the cut (uncoated) edges of the sample show abundant mold growth.

Fig. 8 demonstrates the protective action of three different S-impregnations on cotton fabric after subjection to accelerated rot tests with *Chaetomium globosum* on mineral agar under artificial tropical storage conditions. Three strips of the same cotton fabric were partially impregnated with "S" coating (No. 283-a3) at three different concentrations, as indicated. The strips were subsequently mounted on the surface of mineral agar (according to QMC specifications for accelerated rot tests) and incubated for 13 days at saturated humidity and 30 to 32 deg. C. after heavy inoculation with *Chaetomium globosum* and *Aspergillus*. The strips were then carefully removed from the agar-bed and the degree

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of deterioration tested. The untreated half of each strip (top) showed no appreciable tensile strength due to the highly advanced rot condition (demonstrated by the holes torn in the fabric by light application of a needle), whereas the treated half of each strip showed no observable decrease of strength. It is worth noting that the protection of the "S" coat reaches considerably beyond its border into the untreated part of the fabric. This "sterile zone" is largest for the heaviest impregnation (left sample) and least for the lightest impregnation.

Aside from laboratory experiments of this and various other types, numerous tests have been run by packaging food materials such as cheese and dried fruits with S-coated wrappers. In no case was taste or odor imparted, nor a loss of anchorage of the coating on its base observed, even if the coat had been for a prolonged time in touching (clinging) contact with the food materials.

The protection of semi-dried fruit pastes under prolonged artificial tropical storage conditions, which increased the moisture content of the packed material to the point of semi-liquidity in the presence of heavy mold growth in the environment of the packages, was complete even after several months of exposure to such conditions.

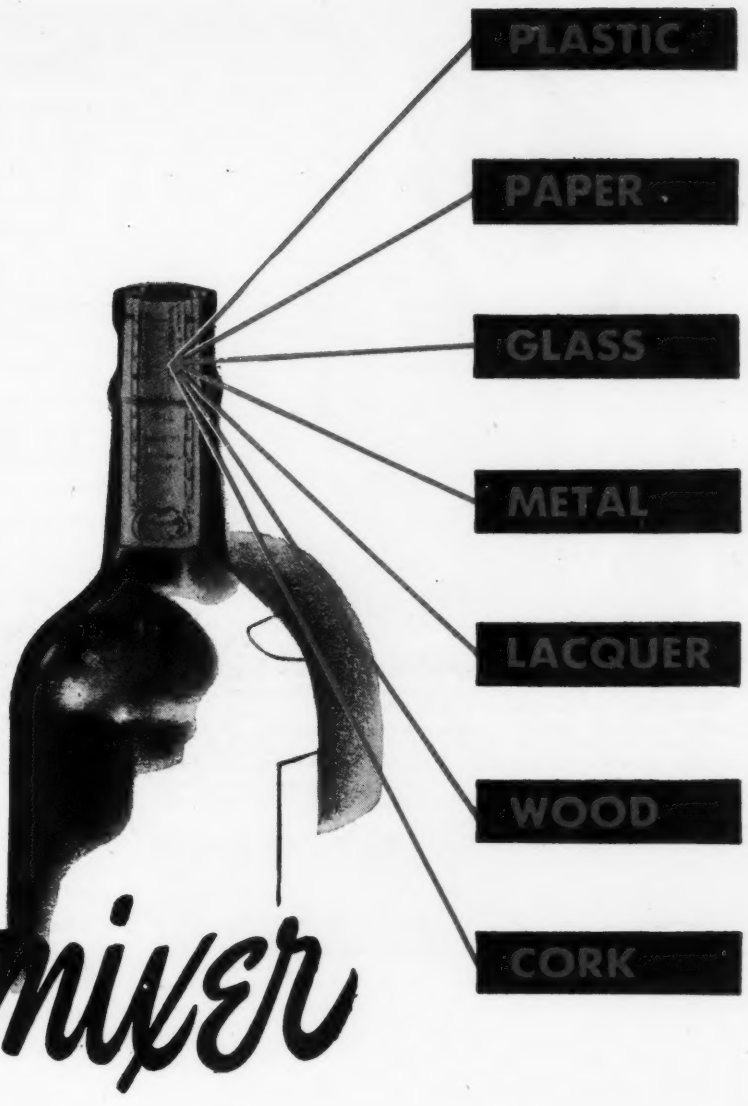
Paper instead of cans

Scotland reports a revolutionary method of wrapping perishables in grease-proof paper.

The possibility that a great many products now packed in cans, or glass, may be wrapped in heavy grease paper, was emphasized in Edinburgh on June 7th at a first display of food products perfected during the war period for use in the fighting Services. While the bulk of the products shown was packed in gas-packed cans, one important item, milk from Australia, was shown in grease-proof waxed paper. The Australians, through their Department of Scientific and Industrial Research, are now attempting to dispose of milk surplus, especially in relation to reduced shipping space. By first dehydrating and then compressing milk, they have produced a solid hard milk block which will keep for 10 years and which has all the virtue of the original milk. The 33-lb. block is equal to 26 liquid gallons, an immense saving in weight and bulk. Since it is as hard as stone, there is no necessity for tinplate containers which gives the process a further advantage even in peacetime. The retarding factor in its commercial development to date has been that it is so hard as to require grinding machinery to be converted again into powder. There is every indication however that the machinery will be made available postwar and that waxed-paper milk blocks will be a regular shipment in place of churn or canned milk.

The same point is already evident in Scotland in that mashed potatoes, potato powder, dehydrated vegetables of all sorts, fish powders and meat powders are now available to the Forces and will be available postwar for the civilian market. In that period it is believed that paperboard packing will be resorted to, where the product can be compressed under extreme pressure as in the case of Australian milk. Already bulk supplies of potatoes and meat, which lend themselves to the process, are being compressed but are being packed in cans for transportation overseas. This exhibition definitely marks the field as being one in which heavy waxed-paper packs can be used to advantage and in which there is every indication of considerable immediate development.

When an adhesive must be *a good mixer*



Rely on National's application research for an adhesive to give you a positive bond on a wide variety of surfaces.

Take any combination of surfaces — plastic, paper, lacquer, metal, cork, or what have you. Vary them with each lot of bottles being stamped. Vary the bottle shape, glass, condition. Then adhere a revenue stamp to all with a *single* waterproof adhesive . . . a very versatile adhesive . . . a good mixer!

National's strip-stamp adhesive does just such a difficult surface variety job. Yet it's only *one* of National's large family of resin adhesives. *Another* is providing water-resistant label protection to pyramiding supplies on the Western Front. *Still others* are bonding everything from lampshades to luggage and bomb rings to bandage boxes. *All* are performing difficult jobs — successfully.

Whatever your specific combination of conditions may be — the surfaces, application methods, field considerations — National as a pioneer in industrial as well as laboratory research, can simplify and speed-up your regular run of work and meet new problems as they arise. Your inquiry is invited — NOW!

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Beer bottle pack for export

(*Continued from page 89*) and, in some instances, be subjected to the salt-laden air of the sea if not to actual "dunking" in the ocean, the carton material was given a wet-strength test.

The heavier V3 board, manufactured with .023 in. liners and .010 in. corrugating member, was performing so satisfactorily, it was felt that an adequate job could be done with a lighter board, hence the experimentation which led to adoption of the new type of corrugated board, now termed for identification purposes "W5c" and "W6c." One factor which led to the adoption of the particular specifications which were set forth for the new board for this purpose was that of the general availability of the .010 in. material, which is used as a corrugating member in all of the three grades of corrugated board for overseas use.

Hence, the new specifications call for use of .010 material for both liners and corrugating element in "W6c," which is used for the double-faced inner liners and separators on the interior of the beer case. The new "W5c" board, used for the shipping case itself, has a corrugating member of .010 in. thickness, and liners of .016 in. thickness.

The "W5c" board must meet a Mullen test of 275 lbs. dry and 100 lbs. after immersion for 24 hours, and the "W6c" a test of 175 lbs. dry and 50 lbs. after 24 hours' immersion.

A separate department to handle this new export pack has been set up at the Jacob Ruppert Brewery, New York, one of the breweries supplying Quartermaster Corps overseas beer requirements. Four hundred 30-lb. bags of sawdust are used every eight hours. The sawdust is brought in by truck and stored in a second-floor loft. In the center of the loft, directly over the filling line on the first floor, there is a large bin with a chute running down to a point directly above the shaking table.

As the case comes off the carton-filling machine, it is conveyed directly onto the shaking table and as it does so it trips a mechanism which releases a p edetermined exact amount of sawdust from the chute immediately above. The improvised vibrating table is operated by a small motor with a wheel having three lugs. As the wheel spins, the lugs hit the under side of the table top, giving it an up-and-down vibration as well as a side sway. The sawdust is thus evenly distributed and packed around the bottles. If any additional sawdust is needed to fill it is added later by hand.

Ordinary beer-carton sealing machines, having compression sections only 12 to 18 ft. in length, were found inadequate for the waterproof sealing required for this pack. A special conveyor was rigged up which is 34 ft. in length, thereby giving the necessary drying time under pressure.

As the cases pass along this sealer, two operators stamp on the QMC requisition number, the purchase number and destination code. From the sealer, the cases are conveyed to a special strapping department having ten round-top tables with a man for each. The table tops, of wood covered with metal, have grooves designed to hold the case in position, and the table tops swivel to facilitate strapping with the customary steel bands.

This department has proved capable of turning out 5,000 cases in a 10-hour day at a cost of about 10 cents per case above ordinary domestic packaging. No floor stock is maintained; cases are run right onto waiting trucks for delivery to a Quartermaster depot.

Credit: Steel strappers and bands by Acme Steel Co., Chicago.

Who Uses Betner

for institutional packaging?

● Many of America's leading processors have found the right answer to their packaging problems right here in Devon, Pa. Yes sir—found the answer in Betner bags.

Frozen foods? The packaging world hasn't yet found more practical containers than Betner's Thermoseal-and-Lamofilm Bags, scientifically designed for quick loading, speedy sealing, maximum moisture-vapor protection, with a minimum of packaging equipment.

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Artwork worries are also solved right here in Devon, Pa., by our own expert art staff, our own giant printing presses. Betner's is a complete packaging service from idea to finished bag!

A letter to us sets our brains a-working on your problems. Post it today. No obligation on your part.

Benj C Betner Co DEVON, PA.

Waterproof paper

(*Continued from page 120*) side and press firmly to aid "setting" of adhesive.

3. Fold in "dog ears" and nail lid on box.

B. Using waterproof tape—

Fold down both sides as described in steps 1 and 2 of Method A. Instead of using asphaltum apply 3-in. waterproof tape along the flap having tape longer than "dog ears" so that it can be folded over the ends. Be careful to eliminate open spots.

C. Using waterproof tape—

1. Top edges of paper are taped together with 3-in. waterproof tape.
2. Bag is then folded down prior to nailing on lid. ("Air pockets" can be eliminated by puncturing bag with knife. After top is folded down prior to nailing this hole can be sealed with waterproof tape.)

There is of course no suggestion that the methods described and illustrated here are the only correct ones. But they have actually proved satisfactory, and are therefore offered for whatever helpfulness may be found in them.

Unsatisfied machine needs

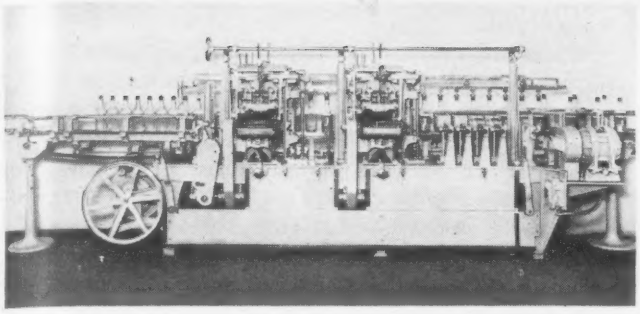
(*Continued from page 76*) to hand labor in some cases to carry on our packaging under wartime conditions. This was necessitated by use of substitute and new types of material as well as entirely new procedures in protective packaging. Hand labor has been augmented by the use of jigs and fixtures made in our own plant from such materials as were available. Some new equipment has been purchased to take care of packaging government orders which require heat sealing and pressure sealing machines for the closure of protective types of packaging. Our standard packaging equipment has also been in use 100% of the time."

The handyman, the shop mechanic and the old-fashioned millwright have found a place of great importance in today's picture. Fortunate indeed are those concerns whose personnel includes such workers. Typical of the common experience are these: "We have been rebuilding our own machines as they break down." . . . "We have been using makeshift equipment of our own development." . . . "We have been making the necessary repairs and new parts in our own shops in order to keep going until new equipment is available."

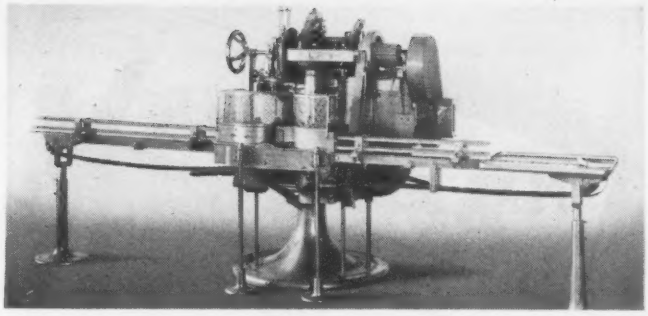
Additional inspection, increased manual operations, reduction of productive output—these stories are repeated with minor variations throughout practically all the industries which reported. There is another side of the picture too: from the hardships and difficulties of today comes promise of future progress. Listen to this:

"We have been doing a tremendous amount of research and experimentation, although in both of these activities we have been somewhat limited by war restrictions and manpower shortages. We have also made our wants and needs known to most machine manufacturers and have urged them to develop the machines needed to meet our future requirements. Any new equipment or ideas developed by our own staff have been made available to all machine manufacturers, or to our industry in general."

"Just making the best of it," is the blueprint for 90% of the



WORLD Automatic BEE-LINE Straightaway Labelers apply front or front-and-back body labels, and neck labels if desired, to round, square, flat, oval or panel containers.



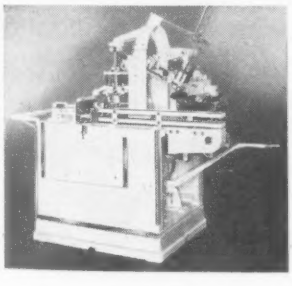
WORLD Automatic ROTARY Labelers apply body labels, neck labels and foil — any or all — to round bottles and jars of all kinds and sizes.

Modern Packaging
and the Postwar WORLD

The one best labeling set-up for *your* glass containers, *your* labels, *your* volume and *your* variety of sizes, is not something to leave until the last minute. It's a key link in the production chain that calls for careful planning and clear understanding of all the possibilities.

The makers of WORLD Labelers are in a unique position to help you line up your labeling and be sure it's *right* from every standpoint — quality, production, economy. Their recommendations are made without prejudice because only WORLD builds *all* types of Labelers — full automatic and semi-automatic — for *all* shapes, sizes and types of glass containers.

Isn't it a good idea to get the facts right from WORLD Headquarters? And isn't *now* the time to do it?



WORLD Automatic TURRET Labelers provide high quality, low cost, body and neck labeling on smooth, fluted or fancy containers.

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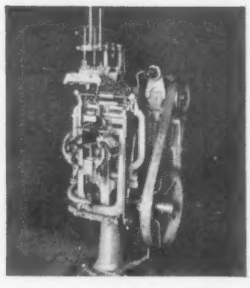
WORLD Semi-Automatic MODEL "S" Labelers apply body labels, all around labels, neck labels, to any size container from tiny samples to gallon jugs.



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package production lines today. It goes without saying that conditions in our country, bad as they are, are infinitely better than those of the rest of the globe. Our refusal to tolerate these conditions for long is proving an important factor in speeding up all productive effort, to hasten the end of the war so that our activities may return to the normal pursuits of peaceful and useful production.

When that time comes the unsatisfied needs of today promise intense activity for manufacturers of every type of packaging machinery. The products of this country will be needed in record-breaking quantities. It is not too soon to plan on rehabilitating the productive machine to take care of the load.

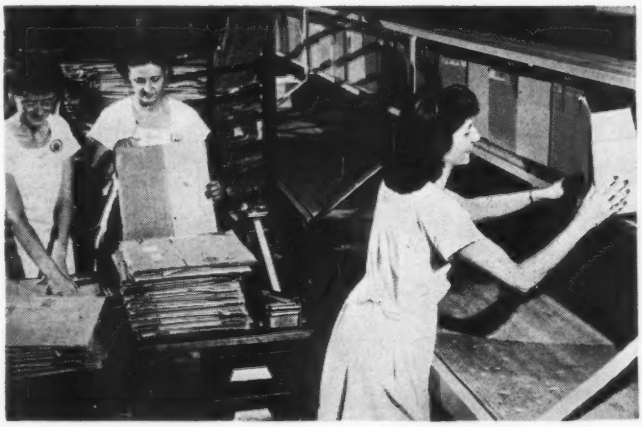
Questions and answers

(Continued from page 122) container will give the vitamin product long-term protection against all of the destructive forces except heat, since this factor depends on storage, etc., I would suggest that you contact the manufacturers of metal containers for data concerning vacuum packing. These manufacturers have long experience and a great deal of technical data on the effectiveness of vacuum packing and also on gas packing. You may find that it is more desirable to gas pack, either with carbon dioxide or nitrogen rather than to use the vacuum process.

Can manufacturers will be able to give you comparative data on both gas packing and vacuum packing, and probably will have specific information about your type of product.

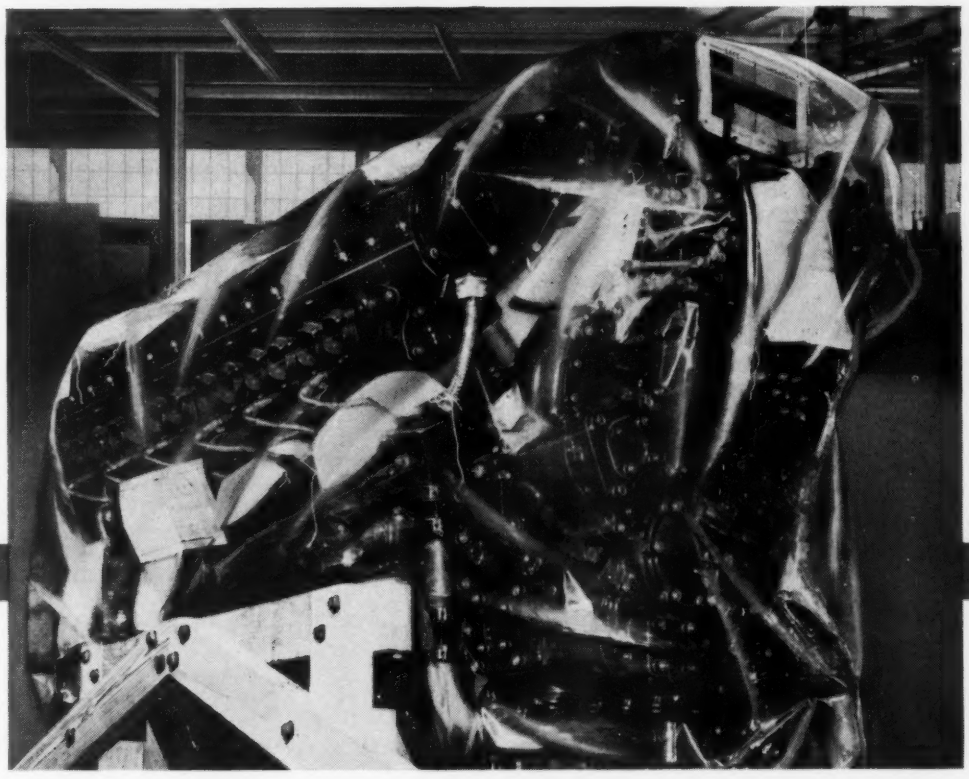
You should also contact the glass container companies, since amber-colored glass with a proper closure and packaging technique, either vacuumizing or gassing, would give you preservation comparable to the metal can. At the moment, there is no plastic or flexible container which can be gas packed or vacuumized in production which will accomplish the type of preservation you desire. There is a great deal of work going on to develop such flexible packages, but it will be sometime in the postwar era before both material and packaging equipment will be available for such applications.

Reclaiming biscuit cartons



Three Sunshine employees of the Loose-Wiles Biscuit Co. complete the last steps in reclamation of containers. In line with Government's paper salvage campaign, Sunshine representatives solicit dealer cooperation and allow full cash allowance for all containers saved. The contents of the biscuit pack are untouched by the reconditioned containers which serve only as outer wraps.

PRECIOUS TIME
captured and packaged
FOR OUR FLYING FORCES . . .



There's far more in this picture than the mighty Fighter Aircraft Engine that meets the eye. Though you can't see it, there's also "Captured Time"—*50 to 75 hours of it!—saved and packaged* inside the strong Kennedy water-repellent, moisture-vapor-proof bag that covers the engine. And thereby hangs a fascinating tale . . .

In collaboration with Army and Navy engineers, Kennedy developed this amazing garment which, with a silica gel desiccant, protects aircraft engines against rust and corrosion. May be removed in a matter of minutes—with the engine ready for instant use. Always before, it was necessary to safeguard engines with a coating of heavy grease. Then, to remove the grease, and prepare the engines for use, meant an expenditure of between 50 and 75 man-hours. When multiplied by thousands of engines, this represented literally millions of hours of time—lost hours which might easily have prolonged the war.

This Kennedy achievement is brought to your attention because of the important peacetime implications it holds for you. Now, as always, Kennedy is pioneering the application of new materials and new principles to packaging problems. Whatever your postwar package needs may be, however complex, Kennedy has the experience, the equipment and the "know-how" to cope with them, effectively and economically. Write us.

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World War II has shown that ordinary packaging papers are corrosive . . . will quickly ruin fine metal products. Sherman V-28 solves this problem! It's completely neutral . . . non-corrosive. Better still, it's anti-corrosive . . . with positive protection that inhibits corrosion!

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An A+ paper, Sherman V-28 meets all government specifications for Grade-A papers: AN-P-12a, 100-15, 53-W-3. It has the high strength required for the Type II group, (60# group in AN-P-12a.)

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PLUS . . . EXTRA GREASEPROOF PROTECTION. Sherman V-28 provides 6 times greater greaseproof protection than Government minimum requirements!

PLUS . . . CORROSION INHIBITOR. Specially treated to resist ruinous corrosion!

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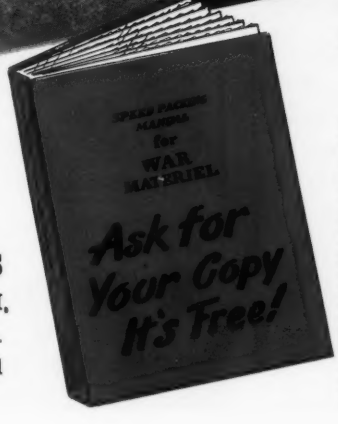

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VUEPAK

...the EYE-WAY to bigger postwar sales!

THESE are the qualities that helped Vuepak rigid, transparent, cellulose acetate sheeting sell hundreds of prewar products from pretzels to lawn seed, bath towels to orchids.

After the war, these same qualities can help sell *your* product if yours is a product that must be seen to be sold.

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Manufacturers, retailers and the buying public—all will again enjoy the benefits of *informative packaging* made possible by Vuepak.

Whatever your postwar products will be, whatever your postwar packaging problems, there is probably a Monsanto Plastic that can help add new sales appeal, provide increased protection or reduce packaging costs.

The broad family of Monsanto Plastics is one of the largest and most versatile groups of plastics offered by any one manufacturer. It includes five different, basic types of molding compounds . . . rigid, transparent Vuepak sheets and rolls . . . heat-sealing, vinyl coating compounds and films . . . and two different, basic types of thermosetting resins used as adhesives and as impregnants for paper.

For the advice of a Monsanto specialist in packaging plastics, write: MONSANTO CHEMICAL COMPANY, Plastics Division, Springfield 2, Massachusetts.

MONSANTO PLASTICS

SERVING INDUSTRY...WHICH SERVES MANKIND

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Modern vacuum packing and sealing processes have further increased the practical use of glass containers. In packaging, glass commands a leading position.

The eagerness with which the housewife accepts a product packed in clear, clean glass is invaluable at the point of sale, where your product in glass speaks for itself!

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Getting down to brass tacks, BALL glass containers, in all respects, are ideal for the *packaging*, *sale*, and *use* of *your* product.

Ball

BALL
BROTHERS COMPANY
General Offices
MUNCIE, INDIANA, U. S. A.

Available Today

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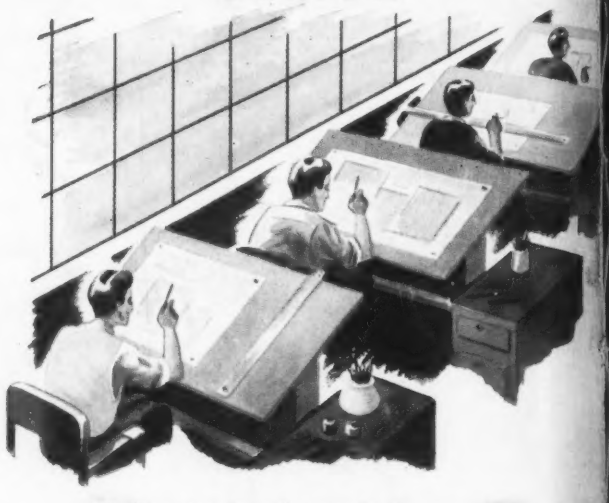
DESIGN



Shellmar has long been a leader in appealing and colorful packaging design. Today, as always, Shellmar artists are available to insure maximum attention value in your package.

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